

No. 10(61)/2009-NICSI
NATIONAL INFORMATICS CENTRE SERVICES INC.

(A Government of India Enterprise under NIC)

Ministry of Communication & Information Technology

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Tender No: NICSI/GENSET/2009/43

CORRIGENDUM-VII

Date: 24.02.2010

MODIFICATIONS TO THE NICSI's Open Tender No. NICSI/GENSET/2009/43 for Empanelment of vendors for Supply, Installation and Commissioning & Diesel Generator Set.

Terms & Conditions: -

1. The tender clause **4.1 (Eligibility Criteria)** may be amended and be read as follow:

“The bidder must be a manufacturer of Diesel Generators. In case of bidder being integrator of quoted diesel genset then bidder must submit a authorization letter from engine OEM as per annexure-H. In absence of authorization letter the bid shall be rejected”.

Each capacity of genset will be treated as a Separate Tender for the purpose of evaluation, processing, empanelment and ordering. Bidders may quote any or all capacity of genset.

2. The tender clause **5.10.1 (Warranty Maintenance)** may be amended and be read as follow:

“All Gensets shall be under three years on-site comprehensive warranty support (including periodic preventive maintenance) from the date of installation or 39 months from date of delivery whichever is earlier at the site. Genset all parts except consumable diesels will be covered under during warranty.

3. The tender clause **5.18.8 (Miscellaneous)** may be added as follow:

“A batch of minimum two officials of NIC/NICSI/User be trained by the bidder/engine manufacturer for period of a week free of cost at factory on purchase of 100 units/ one year whichever is earlier of empanelled genset.

(ANNEXURE-I)

TECHNICAL SPECIFICATIONS FOR DIESEL GENERATORS 5KVA

S. No	Component Name	Required Specifications
1.	ENGINE:	
	COOLING SYSTEM REQD.	Air cooled, Water/Coolant cooled
	WATER LEVEL MAINTENANCE	The Water cooled system of the engine should be equipped with in built expansion tank so that frequent topping up of water/daily check of water level is not needed. Only a top up at 250 hours should suffice. Engine should have high quality and finish to make it a zero leakage system. Similarly the water system should have seals etc. to ensure no water leakage from the water pump.
	OUTPUT	The ENGINE continuous duty rated , should be capable of developing sufficient output HP under site temperature conditions of 45 degree C to ensure full output from 5 kVA alternator.
	MINIMUM HP	Not less than 10 B.H.P continuous rated.
	SPEED	1500 / 3000 rpm
	FUEL PUMP	The pump should be of MONOBLOCK design of MICO or equivalent make to ensure better governing and easy repair in the field.
	GOVERNOR	Mechanical / electronic
	NO. OF CYLINDERS	Single/Multi cylinder, in accordance with is 10001-1981 with latest amendments.
	RECOMMENDED MAKES OF ENGINE	KIRLOSKAR/CUMMINS/MAHINDRA/GREAVES/EICHER/ ESCORTS/ ASHOK LAYLAND / OR EQUIVALENT.
	FLYWHEEL	Of suitable diameter and weight (indicate the diameter and the weight).
	OVERLOAD CAPACITY	Engine should be capable of providing 10% overload for 1 hour for every 11 hour continuous running at full load
	ENGINE ASPIRATION	Naturally Aspirated
	STANDARD THAT THE ENGINE SHOULD MEET	IS/BS (IS 10000/BS:5514/BS:649).
	RADIATOR	Heavy duty with fan (provide technical details).
	SILENCER	Residential type with exhaust piping with vibration isolators (provide technical details).
STARTING	Equipment like electric motor, battery, charging alternator etc. Provision for to electric start.	
ACCESSORIES	Fuel injection equipment, air cleaner, voltage regulator, anti vibration mounting pads, speed controlling governor, suitable coupling system to the alternator, tachometer, lubricating oil temperature and pressure gauge, rpm indicator and hour meter to indicate number of hrs. of operation, auto trip on low oil pressure, over speed alarm with trip, thermal insulation for exhaust	

		line with glass wool, aluminium sheet, chicken mesh, diesel line of suitable diameter.
	PROTECTION	Against low lubricating oil pressure, high water temperature shall be provided for engine with alarm and fuel shut off.
2.	ACOUSTIC ENCLOSURE	The enclosure supplied should ensure not more than 5-7 degree C temperature rise then the outside temperature with natural air circulation. The noise level should not be more than 75 dBA at 1 meter distance. Enclosure should be duly type approved by CPCB authorized lab. The enclosure must be fitted with sheet steel of 1.2/1.6 mm thickness, seven tank pretreated and powder coated with pure polyester powder to enable outdoor installation.
3.	FUEL TANK	Fuel tank with capacity of 12 hours continuous running at full load with necessary piping, fuel gauge, drain valve, inlet and outlet connectors complete in all respect.
4.	ENVIRONMENTAL CONDITIONS	Shall meet requirement of rules 1986 as laid down by Ministry of Environment & Forest read with GSR No. 371 (E) dated: 17.05.2002, GSR 520 (E) dated: 01.07.2003 and GSR 448 (E) dated: 12.07.2004 in respect to emission norms for the engine and in respect of noise level for the DG sets.
5.	ALTERNATOR	Self excited and self regulated alternator should be of brushless type with VG-I grade of voltage regulation giving an output of 5 KVA, single phase 230/240 Volts, 50 Hz, 0.8 (lag) power factor, 2 wire close coupled to the Engine. Class of insulation should be Class "H". Alternator should meet IS 13364 (part-I):1992/2003. Alternator should be capable of 10% overload for one hour and 50% overload for 15 seconds in 12 hours. Permissible voltage variation - +/-1.5% of rated voltage.
	PROTECTION	Screen protected drip proof with IP 21 degree of protection as per IS: 4691/85.
	FRAME	Engine and alternator shall be coupled and mounted on sturdy, fabricated, welded construction base frame.
	RECOMMENDED MAKES OF ALTERNATOR	KIRLOSKAR ELECTRIC/CROMPTON/LEROY SOMER/STAMFORD/Elgi/CGL/KEC or equivalent.
6.	AUTO MAINS FAILURE (AMF) CONTROL PANEL	The AMF control panel shall have the following instruments and accessories: (a) Microprocessor based genset controller with composite meter for digital display Of: i) Output voltage/AC Mains voltage. ii) Output Current. iii) Power Factor iv) Frequency. v) kWh vi) Three attempts engine start/engine cranking relay. vii) On-delay timer for load change over. viii) On-delay timer for engine shut off. (b) Mode selector switch for setting the panel on any one position such as OFF/auto/manual/test. (c) Engine ON-OFF switch (Push button type) (d) MCCB of suitable rating shall be provided. (e) Rectangular aluminum bus bars (one number for each

		<p>phase, neutral and earthing terminal) of adequate ratings duly colour coded with heat shrinkable PVC sleeves.</p> <p>(f) Two contactors of suitable rating (one for DG set & one for AC mains)with over load relay.</p> <p>(g) Under-voltage relay for mains.</p> <p>(h) Automatic Battery charger complete with voltage regulator, float or booster selector switch, ON-OFF switch, voltmeter and ammeter for charging the battery from mains.</p> <p>(i) Instrument & Control Fuses.</p> <p>(j) Five number indicating lamps to indicate 'mains ON', 'load on mains', 'set running', 'load on set' and 'battery charger on'.</p> <p>(K) Audio visual alarm for 'Low lubricating oil pressure', 'High cylinder head temperature','Start failure' and 'DG over load'.</p> <p>(l) Any other switch, instrument, relay or contactor etc. essential for smooth and trouble free functioning of DG set with AMF panel is to be specified by the tenderers in their offer with complete detail of the item.</p> <p>The panel should be within the D G set acoustic enclosure. The system should have an inbuilt By PASS Change Over switch to ensure that in case of AMF / D G Set failure the mains can get directly connected to the load. Make of Contactors acceptable - ABB/Siemens/Schneider/LG (LS) / L&T Make of Microprocessor - Procom / Control & Switchgear / Sun Automation/ Minilec and equivalent.</p>
7.	BATTERY	Battery of very low maintenance - 85 AH or higher lead acid type Make – Amron / Standard Furukawa/ Exide / Amco / Prestolite /Panasonic.
8.	SIZE AND WEIGHT	Should be minimum (provide details).
9.	INSTALLATION DETAILS	<p>* Nos. of GI plate earthing.</p> <p>*RCC / PCC Foundation of size as per DG set and having a height above ground of at least 9 inches.</p> <p>*Length of input/output cables upto a length of 20 mts. May be included in the installation cost and quote additionally for:</p> <p>*4x10 Sq mm armoured aluminium cable (quote as rate per meter)</p> <p>*Cable laying - wall supported/open a(quote as rate per meter)</p> <p>*Cable laying - under ground (quote as rate per meter)</p> <p>*End termination of Cable - 4 terminations(quote as lumpsum)</p> <p>*Exhaust piping with aluminium cladding (where needed) (quote as rate per meter)</p> <p>*Testing of the DG set at the site for 1 hour and handover</p>
10	ANNUAL MAINTENANCE CONTRACT	

	Scope	After expiry of three years comprehensive warranty (including preventive maintenance) covering all parts except Diesel . AMC shall be awarded to the vendor on comprehensive maintenance basis, which includes preventive maintenance, breakdown maintenance and any other required maintenance jobs as per the Terms and Conditions and rates specified in the AMC agreement. Should cover cost of all scheduled and unscheduled maintenance for 1000 hours running per annum including labour charges, servicing and replacement of all types of spares complete as required.
	Probable Items to be covered in AMC, this is not an exhaustive list of all the items but indicative only	Mobile Oil, Filters - All types, Belts, Rubber Parts, Gaskets, AVR's, Contactors & their coils, MCB's, Meters, Coolant, Locks, Hinges, Exhaust Bellows, Control Relays, controller.

(ANNEXURE-II)

TECHNICAL SPECIFICATIONS FOR DIESEL GENERATORS 7.5KVA

S. No	Component Name	Required Specifications
1.	ENGINE:	
	COOLING SYSTEM REQD.	Air cooled, Water/Coolant cooled
	WATER LEVEL MAINTENANCE	The Water cooled system of the engine should be equipped with in built expansion tank so that frequent topping up of water/daily check of water level is not needed. Only a top up at 250 hours should suffice. Engine should have high quality and finish to make it a zero leakage system. Similarly the water system should have seals etc. to ensure no water leakage from the water pump.
	OUTPUT	The ENGINE continuous duty rated , should be capable of developing sufficient output HP under site temperature conditions of 45 degree C to ensure full output from 7.5 kVA alternator.
	MINIMUM HP	Not less than 14 B.H.P continuous rated.
	SPEED	1500/3000 rpm
	FUEL PUMP	The pump should be of MONOBLOCK design of MICO or equivalent make to ensure better governing and easy repair in the field.
	GOVERNOR	Mechanical / electronic
	NO. OF CYLINDERS	Single/Multi cylinder, in accordance with is 10001-1981 with latest amendments.
	RECOMMENDED MAKES OF ENGINE	KIRLOSKAR/CUMMINS/MAHINDRA/GREAVES/EICHER/ESCORT / ASHOK LAYLAND / OR EQUIVALENT.
	FLYWHEEL	Of suitable diameter and weight (indicate the diameter and the weight).

	OVERLOAD CAPACITY	Engine should be capable of providing 10% overload for 1 hour for every 11 hour continuous running at full load
	ENGINE ASPIRATION	Naturally Aspirated
	STANDARD THAT THE ENGINE SHOULD MEET	IS/BS (IS 10000/BS:5514/BS:649).
	RADIATOR	Heavy duty with fan (provide technical details).
	SILENCER	Residential type with exhaust piping with vibration isolators (provide technical details).
	STARTING	Equipment like electric motor, battery, charging alternator etc. Provision for electric start.
	ACCESSORIES	Fuel injection equipment, air cleaner, voltage regulator, anti vibration mounting pads, speed controlling governor, suitable coupling system to the alternator, tachometer, lubricating oil temperature and pressure gauge, rpm indicator and hour meter to indicate number of hrs. of operation, auto trip on low oil pressure, over speed alarm with trip, thermal insulation for exhaust line with glass wool, aluminium sheet, chicken mesh, diesel line of suitable diameter.
	PROTECTION	Against low lubricating oil pressure, high water temperature shall be provided for engine with alarm and fuel shut off.
2.	ACOUSTIC ENCLOSURE	The enclosure supplied should ensure not more than 5-7 degree C temperature rise then the outside temperature with natural air circulation. The noise level should not be more than 75 dBA at 1 meter distance. Enclosure should be duly type approved by CPCB authorized lab. The enclosure must be fitted with sheet steel of 1.2/1.6 mm thickness, seven tank pretreated and powder coated with pure polyester powder to enable outdoor installation.
3.	FUEL TANK	Fuel tank with capacity of 12 hours continuous running at full load with necessary piping, fuel gauge, drain valve, inlet and outlet connectors complete in all respect.
4.	ENVIRONMENTAL CONDITIONS	Shall meet requirement of rules 1986 as laid down by Ministry of Environment & Forest read with GSR No. 371 (E) dated: 17.05.2002, GSR 520 (E) dated: 01.07.2003 and GSR 448 (E) dated: 12.07.2004 in respect to emission norms for the engine and in respect of noise level for the DG sets.
5.	ALTERNATOR	Self excited and self regulated alternator should be of brushless type with VG-I grade of voltage regulation giving an output of 7.5 KVA, single phase 230/240 Volts, 50 Hz, 0.8 (lag) power factor, 2 wire close coupled to the Engine. Class of insulation should be Class "H". Alternator should meet IS 13364 (part-I):1992/2003. Alternator should be capable of 10% overload for one hour and 50% overload for 15 seconds in 12 hours. Permissible voltage variation - +/-1.5% of rated voltage.

	PROTECTION	Screen protected drip proof with IP 21 degree of protection as per IS: 4691/85.
	FRAME	Engine and alternator shall be coupled and mounted on sturdy, fabricated, welded construction base frame.
	RECOMMENDED MAKES OF ALTERNATOR	KIRLOSKAR ELECTRIC/CROMPTON/LEROY SOMER/ STAMFORD/Elgi/CGL/KEC or equivalent.
6.	AUTO MAINS FAILURE (AMF) CONTROL PANEL	<p>The AMF control panel shall have the following instruments and accessories:</p> <ul style="list-style-type: none"> (a) Microprocessor based genset controller with composite meter for digital display Of: <ul style="list-style-type: none"> i) Output voltage/AC Mains voltage. ii) Output Current. iii) Power Factor iv) Frequency. v) kWh vi) Three attempts engine start/engine cranking relay. vii) On-delay timer for load change over. viii) On-delay timer for engine shut off. (b) Mode selector switch for setting the panel on any one position such as OFF/auto/manual/test. (c) Engine ON-OFF switch (Push button type) (d) MCCB of suitable rating shall be provided. (e) Rectangular aluminum bus bars (one number for each phase, neutral and earthing terminal)of adequate ratings duly colour coded with heat shrinkable PVC sleeves. (f) Two contactors of suitable rating (one for DG set & one for AC mains)with over load relay. (g) Under-voltage relay for mains. (h) Automatic Battery charger complete with voltage regulator, float or booster selector switch,ON-OFF switch, voltmeter and ammeter for charging the battery from mains. (i) Instrument & Control Fuses. (j) Five number indicating lamps to indicate 'mains ON', 'load on mains', 'set running', 'load on set' and 'battery charger on'. (K) Audio visual alarm for 'Low lubricating oil pressure', 'High cylinder head temperature','Start failure' and 'DG over load'. (l) Any other switch, instrument, relay or contactor etc. essential for smooth and trouble free functioning of DG set with AMF panel is to be specified by the tenderers in their offer with complete detail of the item. <p>The panel should be within the D G set acoustic enclosure. The system should have an inbuilt By PASS Change Over switch to ensure that in case of AMF / D G Set failure the mains can get directly connected to</p>

		the load. Make of Contactors acceptable - ABB/Siemens/Schneider/LG (LS) / L&T Make of Microprocessor - Procom / Control & Switchgear / Sun Automation/ Minilec and equivalent.
7.	BATTERY	Battery of very low maintenance - 85 AH or higher lead acid type Make - Amron/ Standard Furukawa/ Exide / Amco / Prestolite/Panasonic.
8.	SIZE AND WEIGHT	Should be minimum (provide details).
9.	INSTALLATION DETAILS	*4 Nos. of GI plate earthing. * RCC / PCC Foundation of size as per DG set and having a height above ground of at least 9 inches. *Length of input/output cables upto a length of 20 mts. May be included in the installation cost and quote additionally for: *4x16 Sq mm armoured aluminium cable (quote as rate per meter) *Cable laying - wall supported/open a(quote as rate per meter) *Cable laying - under ground (quote as rate per meter) *End termination of Cable - 4 terminations(quote as lumpsum) *Exhaust piping with aluminium cladding (where needed) (quote as rate per meter) *Testing of the DG set at the site for 1 hour and handover.
10	ANNUAL MAINTENANCE CONTRACT	
	Scope	After expiry of three years comprehensive warranty (including preventive maintenance) covering all parts except Diesel , AMC shall be awarded to the vendor on comprehensive maintenance basis, which includes preventive maintenance, breakdown maintenance and any other required maintenance jobs as per the Terms and Conditions and rates specified in the AMC agreement. Should cover cost of all scheduled and unscheduled maintenance for 1000 hours running per annum including labour charges, servicing and replacement of all types of spares complete as required.
	Probable Items to be covered in AMC, this is not an exhaustive list of all the items but indicative only	Mobile Oil, Filters - All types, Belts, Rubber Parts, Gaskets, AVR's, Contactors & their coils, MCB's, Meters, Coolant, Locks, Hinges, Exhaust Bellows, Control Relays, controller.

(ANNEXURE-III)

TECHNICAL SPECIFICATIONS FOR DIESEL GENERATORS 10KVA

S. No	Component Name	Required Specifications
1.	ENGINE:	
	COOLING SYSTEM REQD.	Air cooled, Water/Coolant cooled
	WATER LEVEL MAINTENANCE	The Water cooled system of the engine should be equipped with in built expansion tank so that frequent topping up of water/daily check of water level

		is not needed. Only a top up at 250 hours should suffice. Engine should have high quality and finish to make it a zero leakage system. Similarly the water system should have seals etc. to ensure no water leakage from the water pump.
	OUTPUT	The ENGINE continuous duty rated , should be capable of developing sufficient output HP under site temperature conditions of 45 degree C to ensure full output from 10 kVA alternator.
	MINIMUM HP	Not less than 17 B.H.P continuous rated.
	SPEED	1500/3000 rpm
	FUEL PUMP	The pump should be of MONOBLOCK design of MICO or equivalent make to ensure better governing and easy repair in the field.
	GOVERNOR	Mechanical / electronic
	NO. OF CYLINDERS	Single/Multi cylinder, in accordance with is 10001-1981 with latest amendments.
	RECOMMENDED MAKES OF ENGINE	KIRLOSKAR/CUMMINS/MAHINDRA/GREAVES/EICHER/ESCORT / ASHOK LAYLAND / OR EQUIVALENT.
	FLYWHEEL	Of suitable diameter and weight (indicate the diameter and the weight).
	OVERLOAD CAPACITY	Engine should be capable of providing 10% overload for 1 hour for every 11 hour continuous running at full load
	ENGINE ASPIRATION	Naturally Aspirated
	STANDARD THAT THE ENGINE SHOULD MEET	IS/BS (IS 10000/BS:5514/BS:649).
	RADIATOR	Heavy duty with fan (provide technical details).
	SILENCER	Residential type with exhaust piping with vibration isolators (provide technical details).
	STARTING	Equipment like electric motor, battery, charging alternator etc. Provision for electric start.
	ACCESSORIES	Fuel injection equipment, air cleaner, voltage regulator, anti vibration mounting pads, speed controlling governor, suitable coupling system to the alternator, tachometer, lubricating oil temperature and pressure gauge, rpm indicator and hour meter to indicate number of hrs. of operation, auto trip on low oil pressure, over speed alarm with trip, thermal insulation for exhaust line with glass wool, aluminium sheet, chicken mesh, diesel line of suitable diameter.
	PROTECTION	Against low lubricating oil pressure, high water temperature shall be provided for engine with alarm and fuel shut off.
2.	ACOUSTIC ENCLOSURE	The enclosure supplied should ensure not more than 5-7 degree C temperature rise then the outside temperature with natural air circulation. The noise level should not be more than 75 dBA at 1 meter distance. Enclosure should be duty type approved by CPCB authorized lab. The enclosure must be fitted with sheet steel of 1.2/1.6 mm thickness, seven tank pretreated and powder coated with pure polyester powder to enable outdoor installation.
3.	FUEL TANK	Fuel tank with capacity of 12 hours continuous running at full load with

		necessary piping, fuel gauge, drain valve, inlet and outlet connectors complete in all respect.
4.	ENVIRONMENTAL CONDITIONS	Shall meet requirement of rules 1986 as laid down by Ministry of Environment & Forest read with GSR No. 371 (E) dated: 17.05.2002, GSR 520 (E) dated: 01.07.2003 and GSR 448 (E) dated: 12.07.2004 in respect to emission norms for the engine and in respect of noise level for the DG sets.
5.	ALTERNATOR	Self excited and self regulated alternator should be of brushless type with VG-I grade of voltage regulation giving an output of 10 KVA, single phase 230/240 Volts, 50 Hz, 0.8 (lag) power factor, 2 wire close coupled to the Engine. Class of insulation should be Class "H". Alternator should meet IS 13364 (part-I):1992/2003. Alternator should be capable of 10% overload for one hour and 50% overload for 15 seconds in 12 hours. Permissible voltage variation - +/-1.5% of rated voltage.
	PROTECTION	Screen protected drip proof with IP 21 degree of protection as per IS: 4691/85.
	FRAME	Engine and alternator shall be coupled and mounted on sturdy, fabricated, welded construction base frame.
	RECOMMENDED MAKES OF ALTERNATOR	KIRLOSKAR ELECTRIC/CROMPTON/LEROY SOMER/STAMFORD/Elgi/CGL/KEC or equivalent.
6.	AUTO MAINS FAILURE (AMF) CONTROL PANEL	<p>The AMF control panel shall have the following instruments and accessories:</p> <p>(a) Microprocessor based genset controller with composite meter for digital display Of:</p> <ol style="list-style-type: none"> i) Output voltage/AC Mains voltage. ii) Output Current. iii) Power Factor iv) Frequency. v) kWh vi) Three attempts engine start/engine cranking relay. vii) On-delay timer for load change over. viii) On-delay timer for engine shut off. <p>(b) Mode selector switch for setting the panel on any one position such as OFF/auto/manual/test.</p> <p>(c) Engine ON-OFF switch (Push button type)</p> <p>(d) MCCB of suitable rating shall be provided.</p> <p>(e) Rectangular aluminum bus bars (one number for each phase, neutral and earthing terminal) of adequate ratings duly colour coded with heat shrinkable PVC sleeves.</p> <p>(f) Two contactors of suitable rating (one for DG set & one for AC mains) with over load relay.</p> <p>(g) Under-voltage relay for mains.</p> <p>(h) Automatic Battery charger complete with voltage regulator, float or booster selector switch, ON-OFF switch, voltmeter and ammeter for charging the battery from mains.</p> <p>(i) Instrument & Control Fuses.</p> <p>(j) Five number indicating lamps to indicate 'mains ON', 'load on mains', 'set running', 'load on set' and 'battery charger on'.</p>

		<p>(K) Audio visual alarm for 'Low lubricating oil pressure', 'High cylinder head temperature', 'Start failure' and 'DG over load'.</p> <p>(l) Any other switch, instrument, relay or contactor etc. essential for smooth and trouble free functioning of DG set with AMF panel is to be specified by the tenderers in their offer with complete detail of the item.</p> <p>The panel should be within the D G set acoustic enclosure.</p> <p>The system should have an inbuilt By PASS Change Over switch to ensure that in case of AMF / D G Set failure the mains can get directly connected to the load.</p> <p>Make of Contactors acceptable - ABB/Siemens/Schneider/LG (LS) / L&T</p> <p>Make of Microprocessor - Procom / Control & Switchgear / Sun Automation/ Minilec and equivalent.</p>
7.	BATTERY	Battery of very low maintenance - 85 AH or higher lead acid type Make - Amron/ Standard Furukawa/ Exide / Amco / Prestolite/Panasonic.
8.	SIZE AND WEIGHT	Should be minimum (provide details).
9.	INSTALLATION DETAILS	<p>*4 Nos. of GI plate earthing.</p> <p>* RCC / PCC Foundation of size as per DG set and having a height above ground of at least 9 inches.</p> <p>*Length of input/output cables upto a length of 20 mts. May be included in the installation cost and quote additionally for:</p> <p>*4x25 Sq mm armoured aluminium cable (quote as rate per meter)</p> <p>*Cable laying - wall supported/open a(quote as rate per meter)</p> <p>*Cable laying - under ground (quote as rate per meter)</p> <p>*End termination of Cable - 4 terminations(quote as lumpsum)</p> <p>*Exhaust piping with aluminium cladding (where needed) (quote as rate per meter)</p> <p>*Testing of the DG set at the site for 1 hour and handover (quote as lumpsum).</p>
10	ANNUAL MAINTENANCE CONTRACT	
	Scope	After expiry of three years comprehensive warranty (including preventive maintenance) covering all parts except Diesel , AMC shall be awarded to the vendor on comprehensive maintenance basis, which includes preventive maintenance, breakdown maintenance and any other required maintenance jobs as per the Terms and Conditions and rates specified in the AMC agreement. Should cover cost of all scheduled and unscheduled maintenance for 1000 hours running per annum including labour charges, servicing and replacement of all types of spares complete as required.
	Probable Items to be covered in AMC, this is not an exhaustive list of	Mobile Oil, Filters - All types, Belts, Rubber Parts, Gaskets, AVR's, Contactors & their coils, MCB's, Meters, Coolant, Locks, Hinges, Exhaust Bellows, Control Relays, controller.

	all the items but indicative only	
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(ANNEXURE-IV)

TECHNICAL SPECIFICATIONS FOR DIESEL GENERATORS 15 KVA

S. No	Component Name	Required Specifications
1.	ENGINE:	
	COOLING SYSTEM REQD.	Air cooled, Water/Coolant cooled
	WATER LEVEL MAINTENANCE	The Water cooled system of the engine should be equipped with in built expansion tank so that frequent topping up of water/daily check of water level is not needed. Only a top up at 250 hours should suffice. Engine should have high quality and finish to make it a zero leakage system. Similarly the water system should have seals etc. to ensure no water leakage from the water pump.
	OUTPUT	The ENGINE continuous duty rated should be capable of developing sufficient output HP under site temperature conditions of 45 degree C to ensure full output from 15 kVA alternator.
	MINIMUM HP	Not less than 22 B.H.P continuous rated.
	SPEED	1500/3000 rpm
	FUEL PUMP	The pump should be of MONOBLOCK design of MICO or equivalent make to ensure better governing and easy repair in the field.
	GOVERNOR	Mechanical / electronic
	NO. OF CYLINDERS	Multi cylinder, in accordance with is 10002-1981 with latest amendments.
	RECOMMENDED MAKES OF ENGINE	KIRLOSKAR/CUMMINS/MAHINDRA/GREAVES/EICHER/ESCORT / ASHOK LAYLAND/ OR EQUIVALENT.
	FLYWHEEL	Of suitable diameter and weight (indicate the diameter and the weight).
	OVERLOAD CAPACITY	Engine should be capable of providing 10% overload for 1 hour for every 11 hour continuous running at full load
	ENGINE ASPIRATION	Naturally Aspirated
	STANDARD THAT THE ENGINE SHOULD MEET	IS/BS (IS 10000/BS:5514/BS:649).
	RADIATOR	Heavy duty with fan (provide technical details).
SILENCER	Residential type with exhaust piping with vibration isolators (provide technical details).	
STARTING	Equipment like electric motor, battery, charging alternator etc. Provision for hand start in addition to electric start.	

	ACCESSORIES	Fuel injection equipment, air cleaner, voltage regulator, anti vibration mounting pads, speed controlling governor, suitable coupling system to the alternator, tachometer, lubricating oil temperature and pressure gauge, rpm indicator and hour meter to indicate number of hrs. of operation, auto trip on low oil pressure, over speed alarm with trip, thermal insulation for exhaust line with glass wool, aluminium sheet, chicken mesh, diesel line of suitable diameter.
	PROTECTION	Against low lubricating oil pressure, high water temperature shall be provided for engine with alarm and fuel shut off.
2.	ACOUSTIC ENCLOSURE	The enclosure supplied should ensure not more than 5-7 degree C temperature rise then the outside temperature with natural air circulation. The noise level should not be more than 75 dBA at 1 meter distance. Enclosure should be duly type approved by CPCB authorized lab. The enclosure must be fitted with sheet steel of 1.2/1.6 mm thickness, seven tank pretreated and powder coated with pure polyester powder to enable outdoor installation.
3.	FUEL TANK	Fuel tank with capacity of 12 hours continuous running at full load with necessary piping, fuel gauge, drain valve, inlet and outlet connectors complete in all respect.
4.	ENVIRONMENTAL CONDITIONS	Shall meet requirement of rules 1986 as laid down by Ministry of Environment & Forest read with GSR No. 371 (E) dated: 17.05.2002, GSR 520 (E) dated: 01.07.2003 and GSR 448 (E) dated: 12.07.2004 in respect to emission norms for the engine and in respect of noise level for the DG sets.
5.	ALTERNATOR	Self excited and self regulated alternator should be of brushless type with VG-I grade of voltage regulation giving an output of 15 KVA, single phase 230/240 Volts, 50 Hz, 0.8 (lag) power factor, 2 wire close coupled to the Engine. Class of insulation should be Class "H". Alternator should meet IS 13364 (part-I):1992/2003. Alternator should be capable of 10% overload for one hour and 50% overload for 15 seconds in 12 hours. Permissible voltage variation - +/- 1.5% of rated voltage.
	PROTECTION	Screen protected drip proof with IP 21 degree of protection as per IS: 4691/85.
	FRAME	Engine and alternator shall be coupled and mounted on sturdy, fabricated, welded construction base frame.
	RECOMMENDED MAKES OF ALTERNATOR	KIRLOSKAR ELECTRIC/CROMPTON/LEROY SOMER/ STAMFORD/ Elgi /CGL / KEC or equivalent.
6.	AUTO MAINS FAILURE (AMF) CONTROL PANEL	The AMF control panel shall have the following instruments and accessories: (a) Microprocessor based genset controller with composite meter for digital display Of: i) Output voltage/AC Mains voltage. ii) Output Current. iii) Power Factor iv) Frequency. v) kWh vi) Three attempts engine start/engine cranking relay. vii) On-delay timer for load change over. viii) On-delay timer for engine shut off. (b) Mode selector switch for setting the panel on any one position such as OFF/auto/manual/test. (c) Engine ON-OFF switch (Push button type) (d) MCCB of suitable rating shall be provided.

		<p>(e) Rectangular aluminum bus bars (one number for each phase, neutral and earthing terminal) of adequate ratings duly colour coded with heat shrinkable PVC sleeves.</p> <p>(f) Two contactors of suitable rating (one for DG set & one for AC mains) with over load relay.</p> <p>(g) Under-voltage relay for mains.</p> <p>(h) Automatic Battery charger complete with voltage regulator, float or booster selector switch, ON-OFF switch, voltmeter and ammeter for charging the battery from mains.</p> <p>(i) Instrument & Control Fuses.</p> <p>(j) Five number indicating lamps to indicate 'mains ON', 'load on mains', 'set running', 'load on set' and 'battery charger on'.</p> <p>(K) Audio visual alarm for 'Low lubricating oil pressure', 'High cylinder head temperature', 'Start failure' and 'DG over load'.</p> <p>(l) Any other switch, instrument, relay or contactor etc. essential for smooth and trouble free functioning of DG set with AMF panel is to be specified by the tenderers in their offer with complete detail of the item.</p> <p>The panel should be within the D G set acoustic enclosure. The system should have an inbuilt By PASS Change Over switch to ensure that in case of AMF / D G Set failure the mains can get directly connected to the load. Make of Contactors acceptable - ABB/Siemens/Schneider/LG (LS) / L&T Make of Microprocessor - Procom / Control & Switchgear / Sun Automation/ Minilec and equivalent.</p>
7.	BATTERY	Battery of very low maintenance - 85 AH or higher lead acid type Make - Amron/ Standard Furukawa/ Exide / Amco / Prestolite/Panasonic.
8.	SIZE AND WEIGHT	Should be minimum (provide details).
9.	INSTALLATION DETAILS	<p>*4 Nos. of GI plate earthing.</p> <p>* RCC / PCC Foundation of size as per DG set and having a height above ground of at least 9 inches.</p> <p>*Length of input/output cables upto a length of 20 mts. May be included in the installation cost and quote additionally for:</p> <p>*4x35 Sq mm armoured aluminium cable (quote as rate per meter)</p> <p>*Cable laying - wall supported/open a (quote as rate per meter)</p> <p>*Cable laying - under ground (quote as rate per meter)</p> <p>*End termination of Cable - 4 terminations (quote as lumpsum)</p> <p>*Exhaust piping with aluminium cladding (where needed) (quote as rate per meter)</p> <p>*Testing of the DG set at the site for 1 hour and handover.</p>
10	ANNUAL MAINTENANCE CONTRACT	

	Scope	After expiry of three years comprehensive warranty (including preventive maintenance) covering all parts except Diesel , AMC shall be awarded to the vendor on comprehensive maintenance basis, which includes preventive maintenance, breakdown maintenance and any other required maintenance jobs as per the Terms and Conditions and rates specified in the AMC agreement. Should cover cost of all scheduled and unscheduled maintenance for 1000 hours running per annum including labour charges, servicing and replacement of all types of spares complete as required.
	Probable Items to be covered in AMC, this is not an exhaustive list of all the items but indicative only	Mobile Oil, Filters - All types, Belts, Rubber Parts, Gaskets, AVR's, Contactors & their coils, MCB's, Meters, Coolant, Locks, Hinges, Exhaust Bellows, Control Relays, controller.

(ANNEXURE-V)

TECHNICAL SPECIFICATIONS FOR DIESEL GENERATORS 20KVA

S. No	Component Name	Required Specifications
1.	ENGINE:	
	COOLING SYSTEM REQD.	Air cooled, Water/Coolant cooled
	WATER LEVEL MAINTENANCE	The Water cooled system of the engine should be equipped with in built expansion tank so that frequent topping up of water/daily check of water level is not needed. Only a top up at 250 hours should suffice. Engine should have high quality and finish to make it a zero leakage system. Similarly the water system should have seals etc. to ensure no water leakage from the water pump.
	OUTPUT	The ENGINE continuous duty rated should be capable of developing sufficient output HP under site temperature conditions of 45 degree C to ensure full output from 20 kVA alternator.
	MINIMUM HP	Not less than 28 B.H.P continuous rated.
	SPEED	1500/3000 rpm
	FUEL PUMP	The pump should be of MONOBLOCK design of MICO or equivalent make to ensure better governing and easy repair in the field.
	GOVERNOR	Mechanical / electronic
	NO. OF CYLINDERS	Multi cylinder, in accordance with is 10002-1981 with latest amendments.
	RECOMMENDED MAKES OF ENGINE	KIRLOSKAR/CUMMINS/MAHINDRA/GREAVES/EICHER/ESCORT / ASHOK LAYLAND / OR EQUIVALENT.
FLYWHEEL	Of suitable diameter and weight (indicate the diameter and the weight).	

	OVERLOAD CAPACITY	Engine should be capable of providing 10% overload for 1 hour for every 11 hour continuous running at full load
	ENGINE ASPIRATION	Naturally Aspirated / Turbojet
	STANDARD THAT THE ENGINE SHOULD MEET	IS/BS (IS 10000/BS:5514/BS:649).
	RADIATOR	Heavy duty with fan (provide technical details).
	SILENCER	Residential type with exhaust piping with vibration isolators (provide technical details).
	STARTING	Equipment like electric motor, battery, charging alternator etc. Provision electric start.
	ACCESSORIES	Fuel injection equipment, air cleaner, voltage regulator, anti vibration mounting pads, speed controlling governor, suitable coupling system to the alternator, tachometer, lubricating oil temperature and pressure gauge, rpm indicator and hour meter to indicate number of hrs. of operation, auto trip on low oil pressure, over speed alarm with trip, thermal insulation for exhaust line with glass wool, aluminium sheet, chicken mesh, diesel line of suitable diameter.
	PROTECTION	Against low lubricating oil pressure, high water temperature shall be provided for engine with alarm and fuel shut off.
2.	ACOUSTIC ENCLOSURE	The enclosure supplied should be fan less ensuring not more than 5-7 degree C temperature rise with natural air circulation. The noise level should not be more than 75 dBA at 1 meter distance. Enclosure should be duly type approved by CPCB authorized lab. The enclosure must be fitted with sheet steel of 1.2/1.6 mm thickness, seven tank pretreated and powder coated with pure polyester powder to enable outdoor installation.
3.	FUEL TANK	Fuel tank with capacity of 12 hours continuous running at full load with necessary piping, fuel gauge, drain valve, inlet and outlet connectors complete in all respect.
4.	ENVIRONMENTAL CONDITIONS	Shall meet requirement of rules 1986 as laid down by Ministry of Environment & Forest read with GSR No. 371 (E) dated: 17.05.2002, GSR 520 (E) dated: 01.07.2003 and GSR 448 (E) dated: 12.07.2004 in respect to emission norms for the engine and in respect of noise level for the DG sets.
5.	ALTERNATOR	Self excited and self regulated alternator should be of brushless type with VG-I grade of voltage regulation giving an output of 20 KVA, single phase 230/240 Volts, 50 Hz, 0.8 (lag) power factor, 2 wire close coupled to the Engine. Class of insulation should be Class "H". Alternator should meet IS 13364 (part-I):1992/2003. Alternator should be capable of 10% overload for one hour and 50% overload for 15 seconds in 12 hours. Permissible voltage variation - +/-1.5% of rated voltage.

	PROTECTION	Screen protected drip proof with IP 21 degree of protection as per IS: 4691/85.
	FRAME	Engine and alternator shall be coupled and mounted on sturdy, fabricated, welded construction base frame.
	RECOMMENDED MAKES OF ALTERNATOR	KIRLOSKAR ELECTRIC/CROMPTON/LEROY SOMER/ STAMFORD/Elgi/CGL/KEC or equivalent.
6.	AUTO MAINS FAILURE (AMF) CONTROL PANEL	<p>The AMF control panel shall have the following instruments and accessories:</p> <p>(a) Microprocessor based genset controller with composite meter for digital display Of:</p> <ul style="list-style-type: none"> i) Output voltage/AC Mains voltage. ii) Output Current. iii) Power Factor iv) Frequency. v) kWh vi) Three attempts engine start/engine cranking relay. vii) On-delay timer for load change over. viii) On-delay timer for engine shut off. <p>(b) Mode selector switch for setting the panel on any one position such as OFF/auto/manual/test.</p> <p>(c) Engine ON-OFF switch (Push button type)</p> <p>(d) MCCB of suitable rating shall be provided.</p> <p>(e) Rectangular aluminum bus bars (one number for each phase, neutral and earthing terminal)of adequate ratings duly colour coded with heat shrinkable PVC sleeves.</p> <p>(f) Two contactors of suitable rating (one for DG set & one for AC mains)with over load relay.</p> <p>(g) Under-voltage relay for mains.</p> <p>(h) Automatic Battery charger complete with voltage regulator, float or booster selector switch, ON-OFF switch, voltmeter and ammeter for charging the battery from mains.</p> <p>(i) Instrument & Control Fuses.</p> <p>(j) Five number indicating lamps to indicate 'mains ON', 'load on mains', 'set running', 'load on set' and 'battery charger on'.</p> <p>(K) Audio visual alarm for 'Low lubricating oil pressure', 'High cylinder head temperature', 'Start Failure' and 'DG over load'.</p> <p>(l) Any other switch, instrument, relay or contactor etc. essential for smooth and trouble free functioning of DG set with AMF panel is to be specified by the tenderers in their offer with complete detail of the item.</p> <p>The panel should be within the D G set acoustic enclosure. The system should have an inbuilt By PASS Change Over switch to ensure that in case of AMF / D G Set failure the mains can get directly connected to the load. Make of Contactors acceptable - ABB/Siemens/Schneider/LG (LS) / L&T</p>

		Make of Microprocessor - Procom / Control & Switchgear / Sun Automation/ Minilec and equivalent.
7.	BATTERY	Battery of very low maintenance - 88 AH lead acid type Make - Amron/ Standard Furukawa/ Exide / Amco / Prestolite/Panasonic.
8.	SIZE AND WEIGHT	Should be minimum (provide details).
9.	INSTALLATION DETAILS	<ul style="list-style-type: none"> • 4 Nos. of GI plate earthing. • RCC/PCC Foundation of size as per DG set and having a height above ground of at least 9 inches. • 4x35 Sq mm armoured aluminium cable (quote as rate per meter) • Cable laying - wall supported/open a(quote as rate per meter) • Cable laying - under ground (quote as rate per meter) • End termination of Cable - 4 terminations(quote as lumpsum) • Exhaust piping with aluminium cladding (where needed) (quote as rate per meter) • Testing of the DG set at the site for 1 hour and handover
10	ANNUAL MAINTENANCE CONTRACT	
	Scope	After expiry of three years comprehensive warranty (including preventive maintenance) covering all parts except Diesel . AMC shall be awarded to the vendor on comprehensive maintenance basis, which includes preventive maintenance, breakdown maintenance and any other required maintenance jobs as per the Terms and Conditions and rates specified in the AMC agreement. Should cover cost of all scheduled and unscheduled maintenance for 1000 hours running per annum including labour charges, servicing and replacement of all types of spares complete as required.
	Probable Items to be covered in AMC, this is not an exhaustive list of all the items but indicative only	Mobile Oil, Filters - All types, Belts, Rubber Parts, Gaskets, AVR's, Contactors & their coils, MCB's, Meters, Coolant, Locks, Hinges, Exhaust Bellows, Control Relays, controller.

GENERAL REQUIREMENT & DETAILS TO BE SUBMITTED FOR ALL QUOTED DIESEL GENSET

Bidders shall furnish the given below details for each quoted capacity separately along with their technical bid.

1. Bidders shall furnish valid BIS license for all engines models up to 19 KW rating along with their offer and must Indicate that the DG sets shall also meet all other statutory requirements as notified by Govt. from time to time.
2. Bidders shall furnish with their offers, copy of Type approval certificate from an Authorized agency in prescribed format for compliance to emission norms and noise level norms for each model of DG sets offered, giving details of model No. of the engine model(s) and alternator model(s) for which such approval is applicable. **In case those**

bidders have just applied for above certificate, should submit the receipt of such submission along with the offer, however should submit all above asked certificate before opening of financial bid. In case bidder fail to submit the above certificate before opening of financial bid, the bid shall be summarily rejected even if bidder technically qualify for the quoted product.

3. Bidders shall confirm that they are in possession of complete & satisfactory TTC for engines, alternators complete with enclosure to be used by them for each rating of DG sets quoted, clearly identifying make, model and ratings of the DG sets tested. The TTC shall be from any Govt. Lab. All the rating falling between the ratings tested for Type test and Endurance Test shall be deemed to have been tested for this purpose. However, all the engines models/ratings will need other relevant certifications as per norms.
4. Guaranteed Technical Particulars (GTP) of DG sets to be furnished by the bidders for each quoted capacity separately.
5. Name of the manufacturers with model number of engine, alternator, oil pump, controller and all other accessories (BOM) fitted in the generator.
6. Rated power output and duty cycle of each component.
7. Maximum temperatures rise above ambient (for engine).
8. Class of insulation.
9. Efficiency of the alternator.
10. Speed of revolution (RPM) at no load and rated voltage.
11. Type of excitation and excitation voltage.
12. Ambient conditions for which the DG set is suitable.
13. Type of enclosure.
14. Type of loads for which the DG set is suitable
15. Maximum load that can be switched ON or OFF and voltage drop/rise permitted.
16. Type of cooling
17. Fuel tank capacity (it shall be suitable for 12 hours minimum at rated load and at continuous operation).
18. Total fuel consumption in liters / KWh
19. Rated engine power and the ambient conditions at which it is defined
20. Dry weight of the DG set with canopy.

21. Vibration level maximum.
22. Deviation in the generator specification from IS specification, if any.
23. Scope of supply shall include testing, supply, transport, safe delivery at user's site across the country, installation, erection and commissioning of the complete DG sets.

Annexure-H

Annexure-Manufacturer Authorization Format

Ref :

Date :

To,
Deputy Manager
Tender Division,
National Informatics Centre Services Inc.,
Hall No. 2 & 3, 6th Floor , NBCC Tower
15, Bhikaiji Cama Place , New delhi-66

Sub : Manufacturer Authorization for Tender No. NICSI/GENSET/2009/43

Sir,

We, <OEM/ Manufacturer name> manufacturer of having our registered office at <OEM/Manufacturer address>, are an established and reputed manufacturer of diesel engine. _____ We confirm that <Bidder Name> having its registered office at <Bidder Address> is our authorized partner/distributor cum service provider for diesel engine being used in tendered diesel gensets.

We authorize them solely to quote diesel gensets in the above mentioned tender having our diesel engine. Our full support is extended to him in all respects for supply, warranty and maintenance of our products. We also ensure to provide the service support for the supplied equipments for a period of 7 years from date of installation of the equipments. We also undertake that in case of default in execution of this tender by the <Bidder Name>, the <OEM/Company Name> will take all necessary steps for successful execution of empanelment against this tender.

Thanking You

For <OEM/ Manufacturer name>
<(Authorized Signatory)>
Name
Designation : Country Head/Legal Head

All other Terms and conditions of the tender will remain unchanged.

Sd/-
Authorised Signatory

For information to: -

1. All concern thorough NICS website www.nicsi.nic.in and E-procurement site.
2. Notice Board of NICS