

Contract



Contract No: GEMC-511687702445816

Generated Date: 11-Jul-2022

Bid/RA No: [GEM/2022/B/1991798](#)

Organisation Details	Buyer Details
Type: Central PSU Ministry: Ministry of Coal Department: Materials Management Organisation Name: Bharat Coking Coal Limited Office Zone: Bccl Dhanbad	Name: Vikky Anand Designation: Assistant Manager Contact No.: 62876-95937- Email ID: buyer9.bccl.dhn@gembuyer.in GSTIN: 20AAACB7934MFZB MM Department, level 3, Commercial Building, Koyla Bhawan, Koyla Nagar, DHANBAD, JHARKHAND-826005, India

Financial Approval Detail	Paying Authority Details
IFD Concurrence: Yes Designation of Administrative Approval: GM MM Designation of Financial Approval: HOD(F)MM	Payment Mode: Offline Designation: HOD Purchase Finance Email ID: pao5.bccl.jh@gembuyer.in GSTIN: N MM Department, level 3, Commercial Building, Koyla Bhawan, Koyla Nagar, DHANBAD, JHARKHAND-826005, India

Seller Details	
GeM Seller ID:	9010190000994723
Company Name:	HARISON GENERATORS PRIVATE LIMITED
Contact No.:	09915999332
Email ID:	CONTACTRAMANSEHGAL@GMAIL.COM
Address:	Plot Number C-58,,Focal Point Industrial Area Patiala,Fiocal Point,Focal Point Patiala, Patiala, PUNJAB-147001, -
MSME verified:	Yes
MSME Registration number:	UDYAM-PB-17-0005195
MSE Social Category:	General
MSE Gender:	Male
GSTIN:	03AAECH6842C1ZZ

*GST / Tax invoice to be raised in the name of - Consignee

Product Details						
#	Item Description	Ordered Quantity	Unit	Unit Price (INR)	Tax Bifurcation (INR)	Price (Inclusive of all Duties and Taxes in INR)
1	Product Name : ICT charges for Power Generator-DG Set (Upto 900 KVA) Brand : NA Brand Type : Unbranded Catalogue Status : Catalogue not verified by OEM Selling As : Reseller not verified by OEM Category Name & Quadrant : Addon Services for bid (Q3) ICT HSN not specified by seller	2	pieces	80,000	GST (18%) : 24,406.78 GST Cess 1 (0%) : 0 GST Cess 2 (0 per accounting unit) : 0 Input Tax Credit (ITC) on GST(100%) : 24,406.78 ITC on GST Cess 1(0%) : 0 ITC on GST Cess 2(0%) : 0	160,000
2	Product Name : DURKATO Power Generator- DG set of 40 AMF Control Panel Brand : DURKATO Brand Type : Registered Brand Catalogue Status : OEM verified catalogue Selling As : OEM Category Name & Quadrant : Power Generator-DG Set (Upto 900 KVA) (Q2) HARISONHG40KVA HSN not specified by seller	1	pieces	419,800	GST (18%) : 64,037.288 GST Cess 1 (0%) : 0 GST Cess 2 (0 per accounting unit) : 0 Input Tax Credit (ITC) on GST(100%) : 64,037.288 ITC on GST Cess 1(0%) : 0 ITC on GST Cess 2(0%) : 0	419,800
3	Product Name : ICT charges for Power Generator-DG Set (Upto 900 KVA) Brand : NA Brand Type : Unbranded Catalogue Status : Catalogue not verified by OEM Selling As : Reseller not verified by OEM Category Name & Quadrant : Addon Services for bid (Q3)	2	pieces	60,000	GST (18%) : 18,305.085 GST Cess 1 (0%) : 0 GST Cess 2 (0 per accounting unit) : 0 Input Tax Credit (ITC) on GST(100%) : 18,305.085 ITC on GST Cess 1(0%) : 0	120,000

	ICT HSN not specified by seller					ITC on GST Cess 2(0%) : 0	
4	Product Name : DURKATO Power Generator- DG set of 30 AMF Control Panel Brand : DURKATO Brand Type : Registered Brand Catalogue Status : OEM verified catalogue Selling As : OEM Category Name & Quadrant : Power Generator-DG Set (Upto 900 KVA) (Q2) HARISONHG30KVA HSN not specified by seller	2	pieces	343,000		GST (18%) : 104,644.068 GST Cess 1 (0%) : 0 GST Cess 2 (0 per accounting unit) : 0 Input Tax Credit (ITC) on GST(100%) : 104,644.068 ITC on GST Cess 1(0%) : 0 ITC on GST Cess 2(0%) : 0	686,000
5	Product Name : ICT charges for Power Generator-DG Set (Upto 900 KVA) Brand : NA Brand Type : Unbranded Catalogue Status : Catalogue not verified by OEM Selling As : Reseller not verified by OEM Category Name & Quadrant : Addon Services for bid (Q3) ICT HSN not specified by seller	2	pieces	60,000		GST (18%) : 18,305.085 GST Cess 1 (0%) : 0 GST Cess 2 (0 per accounting unit) : 0 Input Tax Credit (ITC) on GST(100%) : 18,305.085 ITC on GST Cess 1(0%) : 0 ITC on GST Cess 2(0%) : 0	120,000
6	Product Name : DURKATO Power Generator- DG set of 10 AMF Control Panel Brand : DURKATO Brand Type : Registered Brand Catalogue Status : OEM verified catalogue Selling As : OEM Category Name & Quadrant : Power Generator-DG Set (Upto 900 KVA) (Q2) HARISONHG10KVA HSN not specified by seller	2	pieces	273,000		GST (18%) : 83,288.136 GST Cess 1 (0%) : 0 GST Cess 2 (0 per accounting unit) : 0 Input Tax Credit (ITC) on GST(100%) : 83,288.136 ITC on GST Cess 1(0%) : 0 ITC on GST Cess 2(0%) : 0	546,000
7	Product Name : DURKATO Power Generator- DG set of 5 AMF Control Panel Brand : DURKATO Brand Type : Registered Brand Catalogue Status : OEM verified catalogue Selling As : OEM Category Name & Quadrant : Power Generator-DG Set (Upto 900 KVA) (Q2) HARISONHG5KVA HSN not specified by seller	2	pieces	145,000		GST (18%) : 44,237.288 GST Cess 1 (0%) : 0 GST Cess 2 (0 per accounting unit) : 0 Input Tax Credit (ITC) on GST(100%) : 44,237.288 ITC on GST Cess 1(0%) : 0 ITC on GST Cess 2(0%) : 0	290,000
8	Product Name : ICT charges for Power Generator-DG Set (Upto 900 KVA) Brand : NA Brand Type : Unbranded Catalogue Status : Catalogue not verified by OEM Selling As : Reseller not verified by OEM Category Name & Quadrant : Addon Services for bid (Q3) ICT HSN not specified by seller	1	pieces	84,000		GST (18%) : 12,813.559 GST Cess 1 (0%) : 0 GST Cess 2 (0 per accounting unit) : 0 Input Tax Credit (ITC) on GST(100%) : 12,813.559 ITC on GST Cess 1(0%) : 0 ITC on GST Cess 2(0%) : 0	84,000

Total Order Value (in INR)

2,425,800

Consignee Detail

S.No	Consignee	Item	Lot No.	Quantity	Delivery Start After	Delivery To Be Completed By
1	Designation: - Email ID: rajendra.g5532@nic.in Contact: 9470-596461-628769 GSTIN: - Address: Depot Officer, Bera Regional Store, Near Dowari colliera, Bastacolla Area, P.O. Dhansar, Dhanbad., DHANBAD, JHARKHAND-828106, India	DURKATO Power Generator- DG set of 5 AMF Control Panel	-	2	11-Jul-2022	09-Sep-2022
2	Designation: - Email ID: rahul.babu@nic.in Contact: 62876-97229- GSTIN: 20AAACB7934MFZB Address: Office of Depot Officer , Post Office Lodna, DHANBAD, JHARKHAND., DHANBAD, JHARKHAND-828131, India	DURKATO Power Generator- DG set of 10 AMF Control Panel	-	2	11-Jul-2022	09-Sep-2022
3	Designation: - Email ID: s.rabidas@nic.in Contact: 94705-97799-	DURKATO Power Generator- DG set of 40 AMF Control Panel	-	1	11-Jul-2022	09-Sep-2022

GSTIN: 20AAACB7934MFZB

Address: Depot Officer, Regional Store, Laikdih, Post Chirkunda,
DHANBAD, JHARKHAND-828202, IndiaDURKATO Power Generator- DG
set of 30 AMF Control Panel

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11-Jul-2022

09-Sep-2022

Product Specification for DURKATO Power Generator- DG set of 40 AMF Control Panel

Specification	Sub-Spec	Value
Power Generator INSTALLATION CONFIGURATIONS	Power Generator installation configurations as defined in CPWD General Specifications for Electrical works - Part VII (DG Set)	Fixed (Power Generators are permanently installed)"
OUTPUT CAPACITY RATING/ PHASE	Nominal Rated Capacity (kVA)	40
	No of Phase (Single Phase-3-5kVA) (Single Phase or Three Phase-5 & 7- 5, 10,15, 20, 25, 30 & 40 kVA) (Three Phase-50 to 900 kVA)	Three Phase
ENGINE	Make of Engine	HARISON
	Model Number of Engine	HG5P6R6M
	Capacity of Engine (cc)	3470
	Rated Engine Power (kWm)	110 % of the required powered at STP(Standard Temperature Pressure) i.e equal to (Nominal Rated Capacity (KVA) of power generator Any Auxilary power Consumption by the Power generator) x Power factor(0.8) / Alternator effience
	Type of Engine cooling	Liquid Cooled
	Type of governer	Electronic
	Number of cylinders (nos)	4
	No of Strokes (nos)	4
	Rated RPM of Engine (RPM)	1500
	Fuel	High Speed Diesel (HSD)
	Overload capacity	Engine is capable of delivering an output of 10% in excess of rated KVA for a period of one hour in any period of 12 hours continous running
	Specific Fuel Consumption (gm/kWh)	200 to 265
	Starting voltage (volt)	12
Salient Features of Engine	Turbo Charged Engine,Direct injection Fuel System	
	Class of governer	A2 or better
	"Maximum Change of Speed as a Percentage of Rated Speed on suddenly taking-off the rated load(Transient) "	10
	"Maximum Recovery Time in Seconds on suddenly taking-off the rated load(Transient) "	10

GOVERNING CLASS	Maximum Change of Speed as a Percentage of Rated Speed on suddenly taking-off the rated load(Permanent)	4
	"Maximum Change of Speed as a Percentage of Rated Speed On a change of load, both on and off, by all steps of 25 percent of the rated load (Transient) "	4
	"Maximum Recovery Time in Seconds on a change of load, both on and off, by all steps of 25 percent of the rated load(Transient) "	4
	"Maximum Change of Speed as a Percentage of Rated Speed On a change of load, both on and off, by all steps of 25 percent of the rated load (Permanent)	1.5
ALTERNATOR	AC GENERATOR (ALTERNATOR) Make	LEROY SOMER/MECCALTE
	AC GENERATOR (ALTERNATOR) model Number	LEROY SOMER/MECCALTE
	Alternator Voltage Rating	415
	Rating of AC Generator (KVA)	40
	Power Factor of AC generator	0.8
	Efficiency at rated Power factor at 75% of full Load	89.2
	Conformity to Indian Standard (for Alternator)	Generally conforming to IS:13364 (Part-2) latest (Above 20 KVA)
	Type of alternator	Brushless
	Voltage Regulation Grade	VG 3
	Alternator IP Rating	IP 23
	Class of Insulation	H
Salient features of Alternator	NA	
CONTROL PANEL	Control Panel	AMF Control Panel
	Control Panel Location	Inside the canopy
	IP Rating of Control Panel	IP 54
	Display meters in the control panel (with appropriate rating and accuracy class) - inclusive in the scope of supply	Multifunctional Digital display meter (displaying Voltage, Current, Frequency, Power Factor)
	Other devices in the control panel (with appropriate rating) - inclusive in the	Required switches and cutout,MCB,MCCB,Contactor,Circuit breaker,Battery charger

	scope of supply	
	Displayed parameters/Features	Engine Speed,Lube oil pressure,Coolant/cylinder head Temperature,Engine running hours,Engine battery voltage,Engine Running status,Generator Voltage (Ph-Ph),Generator Voltage (Ph-N),Generator Current (R, Y, B),Generator apparent Power (kVA),Generator active Power (kW),Powerfactor,Frequency,Fuel level,Event log,Control supply Voltage
	Indicators	Low Lube oil pressure,High water / coolant / cylinder head temperature,Low fuel level,Over speed
	Audio Alarm	Low Lube oil pressure,High water / coolant / cylinder head temperature,Low fuel level,Over speed
ACOUSTIC ENCLOSURE	Acoustic Enclosure (inclusive in the scope of supply)	Yes, Power Generator supplied with Acoustic Enclosure
	Sheet Thickness(mm)	1.6
	Thickness of insulation	30
	Density of insulation (kg/cubic m)	30
	Noise level at 1 meter (dB)	75
Fuel Tank	Fuel Tank Capacity	100
	Number of Fuel tank	1
	Fuel Tank Sheet Material Thickness(mm)	2
	Fuel Tank Fabricated Material	M.S Sheet
	Fuel Tank Features	Fuel Tank capacity is sufficient for 8 hrs of running at full load
BATTERY	Battery Type & Specification	"Low Maintenance free to IS: 14257 for high cranking performance"
	Battery capacity (Ah)	90
	No of batteries	1
SALIENT FEATURES	Salient Features of Power Generator	Glass window on Accoustic Enclosure in front of the Control Panel,Emergency Stop outside the Accoustic Enclosure
	Additional Features	NA
TRAILER	Trailer	NA for Fixed/Skid Mounted Power Generator
	Pay load of the Trailer	0
	Number of Axlels	0
	Number of wheels	'NA' for without trailer
	Wheel Tyre size	0
	Brakes	NA for Fixed/Skid Mounted Power Generator
	Trailer Complying to CMVR act and Regulation	NA for Fixed/Skid Mounted Power Generator
	Maximum permissible Speed of Trailer(Km/hr)	0
	Trailer unladen weight	0
	Trailer overall length	0
	Gross Towing Weight (including Power Generator)	0
	Salient Features of trailer	NA
	General Technical Requirements (GTR) / Commissioning(Part-	a) Power Generator shall be complete with Diesel Engine, Alternator and AMF/MANUAL Control Panel along with Acoustic Enclosure. Diesel engine and alternator shall be closely coupled or provided with flexible coupling and mounted on a base plate / M.S. frame of robust in construction.

	1)	
General Technical Requirements (GTR) / Commissioning	General Technical Requirements (GTR) / Commissioning(Part-2)	b) Anti-Vibration mountings shall be provided for complete Power Generator in case of flexible coupling. In case of direct coupling Anti-Vibration mountings shall be provided for the Engine as well as the alternator.
	General Technical Requirements (GTR) / Commissioning(Part-3)	c) Power Generator should have protection against under voltage, over voltage, under frequency, over frequency, low battery voltage, over current, earth-fault, short circuit, phase sequence change etc.
	General Technical Requirements (GTR) / Commissioning(Part-4)	d) Automatic Mains Failure (AMF) control panel, where applicable, shall be able to start up the Power Generator and transfer the load on to the Power Generator on mains failure without requiring any human intervention. Similarly on restoration of mains supply, it shall be able to transfer the load to mains supply and switch off the Power Generator automatically.
	General Technical Requirements (GTR) / Commissioning(Part-5)	e) Control Panel (Manual / AMF), where applicable, shall be equipped with suitable Voltmeter, Ammeter, Frequency meter, power factor meter (these items can be alternatively supplied in one multifunctional digital display meter), battery charger, indicators, various switches and cutout / MCB / MCCB / Contactor / Circuit breaker for the DG output of appropriate rating and accuracy class as per trade practice for better utility.
	General Technical Requirements (GTR) / Commissioning(Part-6)	f) Supply and installation of a change-over Switch / MCCB of suitable rating for Power Generator with manual control panel, where applicable, is inclusive in the scope of supply.
	General Technical Requirements (GTR) / Commissioning(Part-7)	g) Acoustic Enclosure shall be made of Pre-treated and Powder coated CRCA Sheet. The sheet shall be Pre-treated and Powder coated with weather-proof paint. The Acoustic Enclosure shall be vermin proof. The enclosure shall accommodate the (daily service) fuel tank of the Power Generator to make the system compact.
	General Technical Requirements (GTR) / Commissioning(Part-8)	h) Power Generators shall meet the requirements of Environmental (Protection) Rules 1986 as laid down by Min. of Environment & Forests read with GSR 371 (E) dated 17.5.2002,GSR 520(E)dated 1.7.2003 , No.448 (E)dated 12.07.2004 , GSR 771(E) dated 11.12.2013 GSR 232(E)dated 31.03.2014,Gazette Notification No.167 dated. 31.03.2014 and Gazette Notification No. 578 dated. 11.11.2014 in respect of noise and emission norms. The latest amendments to above GSRs shall be applicable as and when amended by Ministry of Environment and Forest.
	General Technical Requirements (GTR) / Commissioning(Part-9)	i) Standard set of tools consisting of a set of 3 spanners, one screw driver, one standard plier and one nose plier of appropriate size shall be provided along with each Power Generator.
	General Technical Requirements (GTR) / Commissioning(Part-10)	j) Supply of Fuel tank of suitable capacity, sufficient for minimum 8 hours running/990 liters(whichever is lower) the Power Generator, is inclusive in the scope of supply. Fuel Tank shall be complete with fuel piping (between fuel tank and diesel engine), valves, level indications and all standard accessories. MS pipes, heavy class of suitable dia conforming to IS 1239 (Part-1) - latest shall be used for fuel piping.
	General Technical Requirements (GTR) / Commissioning(Part-11)	Buyer's Responsibilities: i. Mains ACB for AMF operation shall be provided by the buyer for DG set rating above 600 KVA and above .For DG set other ratings seller shall provide mains and DG contactor/breaker, ii. Exhaust piping, extra civil work, distribution board shall be provided by the buyer. iii. Consumables such as filters, lube oil at the time of servicing during warranty period shall be provided by the buyer. iv. Obtaining necessary approvals, if any, is the responsibility of the buyer.
		Above General Technical Requirements (GTR) / Commissioning have been seen, read, understood and agreed to comply
	Installation	with installation - inclusive in the scope of supply
	Scope of installation for Diesel Generating Set when offered by the vendor - inclusive in the scope of supply(Part-1)	a) Installation of Power Generator when offered by the vendor is inclusive in the scope of supply and shall be done by the seller. The installation work of Power Generator and its constituent parts shall be generally conforming to CPWD General Specification for Electrical Works, Part - VII - latest. b) Foundation shall be constructed by the seller. Foundation shall be of PCC type with the ratio of 4:2:1. The length and breadth of the foundation shall be 300 mm more from the respective length and breadth of the Power Generator. The height of the foundation shall be 400 mm, i.e., 200 mm below and 200 mm above the ground level. All the materials / labour required for foundation work shall be supplied by the seller.
	Scope of installation for Diesel Generating Set	c) Supply, laying and termination of interconnecting power and control cable shall be done by the seller. The cable supplied shall be ISI marked heavy duty PVC insulated, armoured cable, with PVC outer Sheath of Type ST-2 (FR Grade, Category C1), with aluminium conductor having insulation of PVC compound type -C, suitable for rated voltage upto and including 1100 volts and conforming to IS: 1554 (Part-1) latest. For 3-Phase Power Generators, 3.5 core or higher core cables shall be used. Total length of the cable supplied by the seller shall be within 30 meters for each Power Generator

SCOPE OF INSTALLATION	when offered by the vendor - inclusive in the scope of supply(Part-2)	with manual control panel and within 60 metres for each Power Generator with AMF control panel. The current rating of the cables shall be as indicated below: 2C, 6 Sq mm for Single Phase, 3.5 & 5.0 KVA 2C, 10 Sq mm for Single Phase, 7.5 & 10 KVA 2C, 25 Sq mm for Single Phase, 15 KVA 2C, 35 Sq mm for Single Phase, 20 KVA 2C, 70Sq mm for Single Phase, 25 KVA 2C, 95Sq mm for Single Phase, 30 KVA 2C, 120Sq mm for Single Phase, 40 KVA 4C, 4 Sq mm for Three Phase,
	Scope of installation for Diesel Generating Set when offered by the vendor - inclusive in the scope of supply(Part-3)	d) 10 KVA 4C, 6 Sq mm for Three Phase, 15 KVA 4C, 10 Sq mm for Three Phase, 20 & 25 KVA 4C, 16 Sq mm for Three Phase, 30 KVA 3.5C, 25 Sq mm for Three Phase, 40 KVA 3.5C, 35 Sq mm for Three Phase, 50 KVA 3.5C, 70 Sq mm for Three Phase, 62.5 & 75 KVA 3.5C, 95 Sq mm for Three Phase, 82.5 KVA 3.5C, 120 Sq mm for Three Phase, 100 KVA 3.5C, 185 Sq mm for Three Phase, 125 KVA 3.5C, 300 Sq mm for Three Phase, 160 KVA 3.5C, 2 Run of 120 Sq mm for Three Phase, 180 KVA 3.5C, 2 Run of 150 Sq mm for Three Phase, 200 KVA 3.5C, 2 Run of 185 Sq mm for Three Phase, 225 KVA 3.5C, 2 Run of 240 Sq mm for Three Phase, 250 & 275 KVA 3.5C, 3 Run of 185 Sq mm for Three Phase, 320 KVA 3.5C, 3 Run of 240 Sq mm for Three Phase, 380 & 400 KVA 3.5C, 4 Run of 240 Sq mm for Three Phase, 500, 600 & 750 KVA 3.5C, 6 Run of 240 Sq mm for Three Phase, 900 KVA
	Scope of installation for Diesel Generating Set when offered by the vendor - inclusive in the scope of supply(Part-4)	e) Construction of suitable earthing station and necessary connections shall be done by the seller. All the materials / labour required for construction of earthing station shall be supplied by the seller. The total number of earthing pits/stations shall be 4, i.e., 2 for neutral and 2 for body-earthing. Netutral earthing shall be done with copper Plate and Body earthing shall be done with G.I. plate / Copper. The consignee should choose installation site in such a way that the earthing stations can be made within 10 metres of the Power Generator. Earthing station shall be typically constructed as per prevalent standard practices and shall be generally conforming to CPWD General specification for Electrical Works, Part - VII & Part - I - latest. e) Installation of Fuel Tank including foundation / stand shall be done by the seller. f)The warranty is applicable upto specified value of month/hours whichever occurs first's.
	Above Scope of installation for Diesel Generating Set when offered by the vendor has been seen, read, understood and agreed to comply	Yes
WARRANTY/SERVICES	Warranty on Complete power genertor/DG Set	36
	Warranty in running hours	5000
	Number of preventive maintenance visits offered in an year during warranty period (Supply of all consumables is the buyer's responsibilty)*	3
	Response Time to attend the complaint during Warranty	2
	Time Duration for Repairing /Replace the defect during Warranty	5
TEST REPORTS	Type of lab which carried out Test of Complete Product to prove the conformity of product as per specification	Certificates required as per CPCB
	Test report Available for (Test/approval)	Type Approval Certificate for the specified rating of the Power Generator from any of the designated agency authorized by CPCB,COP Certificate for engine,Type test report and Endurance test report for Engine as per IS: 10001 latest / IS: 10002 latest,Type test report for Alternator as per IS:13364 (Part-1) latest / IS:13364 (Part-2) latest to prove conformity to the specifications
	Agree to provide all relevant documents Test Report/supporting document /reports etc to the buyer at the time of bidding or on demand	YES
Installation Commissioning and Testing (ICT) details for the above item:		

% of Product Cost Payable on Product Delivery	80 %
Min Cost Allocation for ICT as a % of product cost	20 %
Number of days allowed for ICT after site readiness communication to seller	30 Days

Product Specification for DURKATO Power Generator- DG set of 30 AMF Control Panel

Specification	Sub-Spec	Value
Power Generator INSTALLATION CONFIGURATIONS	Power Generator installation configurations as defined in CPWD General Specifications for Electrical works - Part VII (DG Set)	Fixed (Power Generators are permanently installed)"
OUTPUT CAPACITY RATING/ PHASE	Nominal Rated Capacity (kVA)	30
	No of Phase (Single Phase-3-5kVA) (Single Phase or Three Phase-5 & 7-5, 10,15, 20, 25, 30 & 40 kVA) (Three Phase-50 to 900 kVA)	Three Phase
ENGINE	Make of Engine	HARISON
	Model Number of Engine	HG4P5R5M
	Capacity of Engine (cc)	3168
	Rated Engine Power (kWm)	110 % of the required powered at STP(Standard Temperature Pressure) i.e equal to (Nominal Rated Capacity (KVA) of power generator Any Auxilary power Consumption by the Power generator) x Power factor(0.8) / Alternator effieience
	Type of Engine cooling	Liquid Cooled
	Type of governer	Mechanical
	Number of cylinders (nos)	4
	No of Strokes (nos)	4
	Rated RPM of Engine (RPM)	1500
	Fuel	High Speed Diesel (HSD)
	Overload capacity	Engine is capable of delivering an output of 10% in excess of rated KVA for a period of one hour in any period of 12 hours continous running
	Specific Fuel Consumption (gm/kWh)	200 to 265
	Starting voltage (volt)	12
Salient Features of Engine	Turbo Charged Engine,Direct injection Fuel System	
Class of governer	A2 or better	
"Maximum Change of Speed as a Percentage of Rated Speed on suddenly taking-off the rated load(Transient) "	10	

GOVERNING CLASS	"Maximum Recovery Time in Seconds on suddenly taking-off the rated load(Transient) "	10
	Maximum Change of Speed as a Percentage of Rated Speed on suddenly taking-off the rated load(Permanent)	3
	"Maximum Change of Speed as a Percentage of Rated Speed On a change of load, both on and off, by all steps of 25 percent of the rated load (Transient) "	3
	"Maximum Recovery Time in Seconds on a change of load, both on and off, by all steps of 25 percent of the rated load(Transient) "	3
	"Maximum Change of Speed as a Percentage of Rated Speed On a change of load, both on and off, by all steps of 25 percent of the rated load (Permanent)	1.5
ALTERNATOR	AC GENERATOR (ALTERNATOR) Make	LEROY SOMER/MECCALTE
	AC GENERATOR (ALTERNATOR) model Number	LEROY SOMER/MECCALTE
	Alternator Voltage Rating	415
	Rating of AC Generator (KVA)	30
	Power Factor of AC generator	0.8
	Efficiency at rated Power factor at 75% of full Load	89
	Conformity to Indian Standard (for Alternator)	Generally conforming to IS:13364 (Part-2) latest (Above 20 KVA)
	Type of alternator	Brushless
	Voltage Regulation Grade	VG 3
	Alternator IP Rating	IP 23
	Class of Insulation	H
Salient features of Alternator	NA	
	Control Panel	AMF Control Panel
	Control Panel Location	Inside the canopy
	IP Rating of Control Panel	IP 54
	Display meters in the control panel (with appropriate rating and accuracy)	Voltmeter,Ammeter,Frequency meter,Power Factor meter,Multifunctional Digital display meter (displaying Voltage, Current, Frequency, Power Factor)

CONTROL PANEL	class) - inclusive in the scope of supply	
	Other devices in the control panel (with appropriate rating) - inclusive in the scope of supply	Required switches and cutout,MCB,MCCB,Contactor,Circuit breaker,Battery charger
	Displayed parameters/Features	Engine Speed,Lube oil pressure,Coolant/cylinder head Temperature,Engine running hours,Engine battery voltage,Engine Running status,Generator Voltage (Ph-Ph),Generator Voltage (Ph-N),Generator Current (R, Y, B),Generator apparent Power (kVA),Generator active Power (kW),Powerfactor,Frequency,Fuel level,Event log,Control supply Voltage
	Indicators	Low Lube oil pressure,High water / coolant / cylinder head temperature,Low fuel level,Over speed
	Audio Alarm	Low Lube oil pressure,High water / coolant / cylinder head temperature,Low fuel level,Over speed
ACOUSTIC ENCLOSURE	Acoustic Enclosure (inclusive in the scope of supply)	Yes, Power Generator supplied with Acoustic Enclosure
	Sheet Thickness(mm)	1.6
	Thickness of insulation	28
	Density of insulation (kg/cubic m)	28
	Noise level at 1 meter (dB)	75
Fuel Tank	Fuel Tank Capacity	90
	Number of Fuel tank	1
	Fuel Tank Sheet Material Thickness(mm)	2
	Fuel Tank Fabricated Material	M.S Sheet
	Fuel Tank Features	Fuel Tank capacity is sufficient for 8 hrs of running at full load
BATTERY	Battery Type & Specification	"Low Maintenance free to IS: 14257 for high cranking performance"
	Battery capacity (Ah)	90
	No of batteries	1
SALIENT FEATURES	Salient Features of Power Generator	Glass window on Accoustic Enclosure in front of the Control Panel,Emergency Stop outside the Accoustic Enclosure
	Additional Features	NA
TRAILER	Trailer	NA for Fixed/Skid Mounted Power Generator
	Pay load of the Trailer	0
	Number of Axlels	0
	Number of wheels	'NA' for without trailer
	Wheel Tyre size	0
	Brakes	NA for Fixed/Skid Mounted Power Generator
	Trailer Complying to CMVR act and Regulation	NA for Fixed/Skid Mounted Power Generator
	Maximum permissible Speed of Trailer(Km/hr)	0
	Trailer unladen weight	0
	Trailer overall length	0
	Gross Towing Weight (including Power Generator)	0
	Salient Features of	NA

	trailer	
General Technical Requirements (GTR) / Commissioning	General Technical Requirements (GTR) / Commissioning(Part-1)	a) Power Generator shall be complete with Diesel Engine, Alternator and AMF/MANUAL Control Panel along with Acoustic Enclosure. Diesel engine and alternator shall be closely coupled or provided with flexible coupling and mounted on a base plate / M.S. frame of robust in construction.
	General Technical Requirements (GTR) / Commissioning(Part-2)	b) Anti-Vibration mountings shall be provided for complete Power Generator in case of flexible coupling. In case of direct coupling Anti-Vibration mountings shall be provided for the Engine as well as the alternator.
	General Technical Requirements (GTR) / Commissioning(Part-3)	c) Power Generator should have protection against under voltage, over voltage, under frequency, over frequency, low battery voltage, over current, earth-fault, short circuit, phase sequence change etc.
	General Technical Requirements (GTR) / Commissioning(Part-4)	d) Automatic Mains Failure (AMF) control panel, where applicable, shall be able to start up the Power Generator and transfer the load on to the Power Generator on mains failure without requiring any human intervention. Similarly on restoration of mains supply, it shall be able to transfer the load to mains supply and switch off the Power Generator automatically.
	General Technical Requirements (GTR) / Commissioning(Part-5)	e) Control Panel (Manual / AMF), where applicable, shall be equipped with suitable Voltmeter, Ammeter, Frequency meter, power factor meter (these items can be alternatively supplied in one multifunctional digital display meter), battery charger, indicators, various switches and cutout / MCB / MCCB / Contactor / Circuit breaker for the DG output of appropriate rating and accuracy class as per trade practice for better utility.
	General Technical Requirements (GTR) / Commissioning(Part-6)	f) Supply and installation of a change-over Switch / MCCB of suitable rating for Power Generator with manual control panel, where applicable, is inclusive in the scope of supply.
	General Technical Requirements (GTR) / Commissioning(Part-7)	g) Acoustic Enclosure shall be made of Pre-treated and Powder coated CRCA Sheet. The sheet shall be Pre-treated and Powder coated with weather-proof paint. The Acoustic Enclosure shall be vermin proof. The enclosure shall accommodate the (daily service) fuel tank of the Power Generator to make the system compact.
	General Technical Requirements (GTR) / Commissioning(Part-8)	h) Power Generators shall meet the requirements of Environmental (Protection) Rules 1986 as laid down by Min. of Environment & Forests read with GSR 371 (E) dated 17.5.2002,GSR 520(E)dated 1.7.2003 , No.448 (E)dated 12.07.2004 , GSR 771(E) dated 11.12.2013 GSR 232(E)dated 31.03.2014,Gazette Notification No.167 dated. 31.03.2014 and Gazette Notification No. 578 dated. 11.11.2014 in respect of noise and emission norms. The latest amendments to above GSRs shall be applicable as and when amended by Ministry of Environment and Forest.
	General Technical Requirements (GTR) / Commissioning(Part-9)	i) Standard set of tools consisting of a set of 3 spanners, one screw driver, one standard plier and one nose plier of appropriate size shall be provided along with each Power Generator.
	General Technical Requirements (GTR) / Commissioning(Part-10)	j) Supply of Fuel tank of suitable capacity, sufficient for minimum 8 hours running/990 liters(whichever is lower) the Power Generator, is inclusive in the scope of supply. Fuel Tank shall be complete with fuel piping (between fuel tank and diesel engine), valves, level indications and all standard accessories. MS pipes, heavy class of suitable dia conforming to IS 1239 (Part-1) - latest shall be used for fuel piping.
	General Technical Requirements (GTR) / Commissioning(Part-11)	Buyer's Responsibilities: i. Mains ACB for AMF operation shall be provided by the buyer for DG set rating above 600 KVA and above .For DG set other ratings seller shall provide mains and DG contactor/breaker, ii. Exhaust piping, extra civil work, distribution board shall be provided by the buyer. iii. Consumables such as filters, lube oil at the time of servicing during warranty period shall be provided by the buyer. iv. Obtaining necessary approvals, if any, is the responsibility of the buyer.
Above General Technical Requirements (GTR) / Commissioning have been seen, read, understood and agreed to comply	Yes	
	Installation	with installation - inclusive in the scope of supply
	Scope of installation for Diesel Generating Set when offered by the vendor - inclusive in the scope of supply(Part-1)	a) Installation of Power Generator when offered by the vendor is inclusive in the scope of supply and shall be done by the seller. The installation work of Power Generator and its constituent parts shall be generally conforming to CPWD General Specification for Electrical Works, Part - VII - latest. b) Foundation shall be constructed by the seller. Foundation shall be of PCC type with the ratio of 4:2:1. The length and breadth of the foundation shall be 300 mm more from the respective length and breadth of the Power Generator. The height of the foundation shall be 400 mm, i.e., 200 mm below and 200 mm above the ground level. All the materials / labour required for foundation work shall be supplied by the seller.

SCOPE OF INSTALLATION	Scope of installation for Diesel Generating Set when offered by the vendor - inclusive in the scope of supply(Part-2)	c) Supply, laying and termination of interconnecting power and control cable shall be done by the seller. The cable supplied shall be ISI marked heavy duty PVC insulated, armoured cable, with PVC outer Sheath of Type ST-2 (FR Grade, Category C1), with aluminium conductor having insulation of PVC compound type -C, suitable for rated voltage upto and including 1100 volts and conforming to IS: 1554 (Part-1) latest. For 3-Phase Power Generators, 3.5 core or higher core cables shall be used. Total length of the cable supplied by the seller shall be within 30 meters for each Power Generator with manual control panel and within 60 metres for each Power Generator with AMF control panel. The current rating of the cables shall be as indicated below: 2C, 6 Sq mm for Single Phase, 3.5 & 5.0 KVA 2C, 10 Sq mm for Single Phase, 7.5 & 10 KVA 2C, 25 Sq mm for Single Phase, 15 KVA 2C, 35 Sq mm for Single Phase, 20 KVA 2C, 70Sq mm for Single Phase, 25 KVA 2C, 95Sq mm for Single Phase, 30 KVA 2C, 120Sq mm for Single Phase, 40 KVA 4C, 4 Sq mm for Three Phase,
	Scope of installation for Diesel Generating Set when offered by the vendor - inclusive in the scope of supply(Part-3)	d) 10 KVA 4C, 6 Sq mm for Three Phase, 15 KVA 4C, 10 Sq mm for Three Phase, 20 & 25 KVA 4C, 16 Sq mm for Three Phase, 30 KVA 3.5C, 25 Sq mm for Three Phase, 40 KVA 3.5C, 35 Sq mm for Three Phase, 50 KVA 3.5C, 70 Sq mm for Three Phase, 62.5 & 75 KVA 3.5C, 95 Sq mm for Three Phase, 82.5 KVA 3.5C, 120 Sq mm for Three Phase, 100 KVA 3.5C, 185 Sq mm for Three Phase, 125 KVA 3.5C, 300 Sq mm for Three Phase, 160 KVA 3.5C, 2 Run of 120 Sq mm for Three Phase, 180 KVA 3.5C, 2 Run of 150 Sq mm for Three Phase, 200 KVA 3.5C, 2 Run of 185 Sq mm for Three Phase, 225 KVA 3.5C, 2 Run of 240 Sq mm for Three Phase, 250 & 275 KVA 3.5C, 3 Run of 185 Sq mm for Three Phase, 320 KVA 3.5C, 3 Run of 240 Sq mm for Three Phase, 380 & 400 KVA 3.5C, 4 Run of 240 Sq mm for Three Phase, 500, 600 & 750 KVA 3.5C, 6 Run of 240 Sq mm for Three Phase, 900 KVA
	Scope of installation for Diesel Generating Set when offered by the vendor - inclusive in the scope of supply(Part-4)	e) Construction of suitable earthing station and necessary connections shall be done by the seller. All the materials / labour required for construction of earthing station shall be supplied by the seller. The total number of earthing pits/stations shall be 4, i.e., 2 for neutral and 2 for body-earthing. Netutral earthing shall be done with copper Plate and Body earthing shall be done with G.I. plate / Copper. The consignee should choose installation site in such a way that the earthing stations can be made within 10 metres of the Power Generator. Earthing station shall be typically constructed as per prevalent standard practices and shall be generally conforming to CPWD General specification for Electrical Works, Part - VII & Part - I - latest. e) Installation of Fuel Tank including foundation / stand shall be done by the seller. f)The warranty is applicable upto specified value of month/hours whichever occurs first's.
	Above Scope of installation for Diesel Generating Set when offered by the vendor has been seen, read, understood and agreed to comply	Yes
WARRANTY/SERVICES	Warranty on Complete power genertor/DG Set	36
	Warranty in running hours	5000
	Number of preventive maintenance visits offered in an year during warranty period (Supply of all consumables is the buyer's responsibilty)*	2
	Response Time to attend the complaint during Warranty	2
TEST REPORTS	Time Duration for Repairing /Replace the defect during Warranty	5
	Type of lab which carried out Test of Complete Product to prove the conformity of product as per specification	Certificates required as per CPCB
	Test report Available for (Test/approval)	Type Approval Certificate for the specified rating of the Power Generator from any of the designated agency authorized by CPCB,COP Certificate for engine,Type test report and Endurance test report for Engine as per IS: 10001 latest / IS: 10002 latest,Type test report for Alternator as per IS:13364 (Part-1) latest / IS:13364 (Part-2) latest to prove conformity to the specifications
Agree to provide all relevant documents Test Report/supporting document /reports etc to the buyer at	YES	

the time of bidding or on demand

Buyer Defined Additional Specification for DURKATO Power Generator- DG set of 30 AMF Control Panel

Specification	Value
Type of governer	Mechanical

Installation Commissioning and Testing (ICT) details for the above item:

% of Product Cost Payable on Product Delivery	80 %
Min Cost Allocation for ICT as a % of product cost	20 %
Number of days allowed for ICT after site readiness communication to seller	30 Days

Product Specification for DURKATO Power Generator- DG set of 10 AMF Control Panel

Specification	Sub-Spec	Value
Power Generator INSTALLATION CONFIGURATIONS	Power Generator installation configurations as defined in CPWD General Specifications for Electrical works - Part VII (DG Set)	Fixed (Power Generators are permanently installed)"
OUTPUT CAPACITY RATING/ PHASE	Nominal Rated Capacity (kVA)	10
	No of Phase (Single Phase-3-5kVA) (Single Phase or Three Phase-5 & 7-5, 10,15, 20, 25, 30 & 40 kVA) (Three Phase-50 to 900 kVA)	Three Phase
ENGINE	Make of Engine	HARISON
	Model Number of Engine	C490BD
	Capacity of Engine (cc)	2672
	Rated Engine Power (kWm)	100 % of the required powered at STP(Standard Temperature Pressure) i.e equal to (Nominal Rated Capacity (KVA) of power generator + Any Auxilary power Consumption by the Power generator) x Power factor(0.8) / Alternator effiencence
	Type of Engine cooling	Liquid Cooled
	Type of governer	Mechanical
	Number of cylinders (nos)	4
	No of Strokes (nos)	4
	Rated RPM of Engine (RPM)	1500
	Fuel	High Speed Diesel (HSD)
	Overload capacity	Engine is capable of delivering an output of 10% in excess of rated KVA for a period of one hour in any period of 12 hours continous running
	Specific Fuel Consumption (gm/kWh)	200 to 265

	Starting voltage (volt)	12
	Salient Features of Engine	Turbo Charged Engine,Direct injection Fuel System
GOVERNING CLASS	Class of governer	A2 or better
	"Maximum Change of Speed as a Percentage of Rated Speed on suddenly taking-off the rated load(Transient) "	10
	"Maximum Recovery Time in Seconds on suddenly taking-off the rated load(Transient) "	10
	Maximum Change of Speed as a Percentage of Rated Speed on suddenly taking-off the rated load(Permanent)	3
	"Maximum Change of Speed as a Percentage of Rated Speed On a change of load, both on and off, by all steps of 25 percent of the rated load (Transient) "	3
	"Maximum Recovery Time in Seconds on a change of load, both on and off, by all steps of 25 percent of the rated load(Transient) "	3
	"Maximum Change of Speed as a Percentage of Rated Speed On a change of load, both on and off, by all steps of 25 percent of the rated load (Permanent)	1.5
ALTERNATOR	AC GENERATOR (ALTERNATOR) Make	LEROY SOMER/MECCALTE
	AC GENERATOR (ALTERNATOR) model Number	LEROY SOMER/MECCALTE
	Alternator Voltage Rating	415
	Rating of AC Generator (KVA)	10
	Power Factor of AC generator	0.8
	Efficiency at rated Power factor at 75% of full Load	88
	Conformity to Indian Standard (for Alternator)	Generally conforming to IS:13364 (Part-1) latest (Upto 20 kVA)
	Type of alternator	Brushless
	Voltage Regulation Grade	VG 3
	Alternator IP Rating	IP 23
	Class of Insulation	H
	Salient features of	

	Alternator	NA
CONTROL PANEL	Control Panel	AMF Control Panel
	Control Panel Location	Inside the canopy
	IP Rating of Control Panel	IP 54
	Display meters in the control panel (with appropriate rating and accuracy class) - inclusive in the scope of supply	Multifunctional Digital display meter (displaying Voltage, Current, Frequency, Power Factor)
	Other devices in the control panel (with appropriate rating) - inclusive in the scope of supply	Required switches and cutout,MCB,MCCB,Contactor,Circuit breaker,Battery charger
	Displayed parameters/Features	Engine Speed,Lube oil pressure,Coolant/cylinder head Temperature,Engine running hours,Engine battery voltage,Engine Running status,Generator Voltage (Ph-Ph),Generator Voltage (Ph-N),Generator Current (R, Y, B),Generator apparent Power (kVA),Generator active Power (kW),Powerfactor,Frequency,Fuel level,Event log,Control supply Voltage
	Indicators	Low Lube oil pressure,High water / coolant / cylinder head temperature,Low fuel level,Over speed
	Audio Alarm	Low Lube oil pressure,High water / coolant / cylinder head temperature,Low fuel level,Over speed
ACOUSTIC ENCLOSURE	Acoustic Enclosure (inclusive in the scope of supply)	Yes, Power Generator supplied with Acoustic Enclosure
	Sheet Thickness(mm)	1.6
	Thickness of insulation	20
	Density of insulation (kg/cubic m)	20
	Noise level at 1 meter (dB)	75
Fuel Tank	Fuel Tank Capacity	90
	Number of Fuel tank	1
	Fuel Tank Sheet Material Thickness(mm)	2
	Fuel Tank Fabricated Material	M.S Sheet
	Fuel Tank Features	Fuel Tank capacity is sufficient for 8 hrs of running at full load
BATTERY	Battery Type & Specification	"Low Maintenance free to IS: 14257 for high cranking performance"
	Battery capacity (Ah)	90
	No of batteries	1
SALIENT FEATURES	Salient Features of Power Generator	Glass window on Accoustic Enclosure in front of the Control Panel,Emergency Stop outside the Accoustic Enclosure
	Additional Features	NA
TRAILER	Trailer	NA for Fixed/Skid Mounted Power Generator
	Pay load of the Trailer	0
	Number of Axlels	0
	Number of wheels	'NA' for without trailer
	Wheel Tyre size	0
	Brakes	NA for Fixed/Skid Mounted Power Generator
	Trailer Complying to CMVR act and Regulation	NA for Fixed/Skid Mounted Power Generator

	Maximum permissible Speed of Trailer(Km/hr)	0
	Trailer unladen weight	0
	Trailer overall length	0
	Gross Towing Weight (including Power Generator)	0
	Salient Features of trailer	NA
General Technical Requirements (GTR) / Commissioning	General Technical Requirements (GTR) / Commissioning(Part-1)	a) Power Generator shall be complete with Diesel Engine, Alternator and AMF/MANUAL Control Panel along with Acoustic Enclosure. Diesel engine and alternator shall be closely coupled or provided with flexible coupling and mounted on a base plate / M.S. frame of robust in construction.
	General Technical Requirements (GTR) / Commissioning(Part-2)	b) Anti-Vibration mountings shall be provided for complete Power Generator in case of flexible coupling. In case of direct coupling Anti-Vibration mountings shall be provided for the Engine as well as the alternator.
	General Technical Requirements (GTR) / Commissioning(Part-3)	c) Power Generator should have protection against under voltage, over voltage, under frequency, over frequency, low battery voltage, over current, earth-fault, short circuit, phase sequence change etc.
	General Technical Requirements (GTR) / Commissioning(Part-4)	d) Automatic Mains Failure (AMF) control panel, where applicable, shall be able to start up the Power Generator and transfer the load on to the Power Generator on mains failure without requiring any human intervention. Similarly on restoration of mains supply, it shall be able to transfer the load to mains supply and switch off the Power Generator automatically.
	General Technical Requirements (GTR) / Commissioning(Part-5)	e) Control Panel (Manual / AMF), where applicable, shall be equipped with suitable Voltmeter, Ammeter, Frequency meter, power factor meter (these items can be alternatively supplied in one multifunctional digital display meter), battery charger, indicators, various switches and cutout / MCB / MCCB / Contactor / Circuit breaker for the DG output of appropriate rating and accuracy class as per trade practice for better utility.
	General Technical Requirements (GTR) / Commissioning(Part-6)	f) Supply and installation of a change-over Switch / MCCB of suitable rating for Power Generator with manual control panel, where applicable, is inclusive in the scope of supply.
	General Technical Requirements (GTR) / Commissioning(Part-7)	g) Acoustic Enclosure shall be made of Pre-treated and Powder coated CRCA Sheet. The sheet shall be Pre-treated and Powder coated with weather-proof paint. The Acoustic Enclosure shall be vermin proof. The enclosure shall accommodate the (daily service) fuel tank of the Power Generator to make the system compact.
	General Technical Requirements (GTR) / Commissioning(Part-8)	h) Power Generators shall meet the requirements of Environmental (Protection) Rules 1986 as laid down by Min. of Environment & Forests read with GSR 371 (E) dated 17.5.2002,GSR 520(E)dated 1.7.2003 , No.448 (E)dated 12.07.2004 , GSR 771(E) dated 11.12.2013 GSR 232(E)dated 31.03.2014,Gazette Notification No.167 dated. 31.03.2014 and Gazette Notification No. 578 dated. 11.11.2014 in respect of noise and emission norms. The latest amendments to above GSRs shall be applicable as and when amended by Ministry of Environment and Forest.
	General Technical Requirements (GTR) / Commissioning(Part-9)	i) Standard set of tools consisting of a set of 3 spanners, one screw driver, one standard plier and one nose plier of appropriate size shall be provided along with each Power Generator.
	General Technical Requirements (GTR) / Commissioning(Part-10)	j) Supply of Fuel tank of suitable capacity, sufficient for minimum 8 hours running/990 liters(whichever is lower) the Power Generator, is inclusive in the scope of supply. Fuel Tank shall be complete with fuel piping (between fuel tank and diesel engine), valves, level indications and all standard accessories. MS pipes, heavy class of suitable dia conforming to IS 1239 (Part-1) - latest shall be used for fuel piping.
	General Technical Requirements (GTR) / Commissioning(Part-11)	Buyer's Responsibilities: i. Mains ACB for AMF operation shall be provided by the buyer for DG set rating above 600 KVA and above .For DG set other ratings seller shall provide mains and DG contactor/breaker, ii. Exhaust piping, extra civil work, distribution board shall be provided by the buyer. iii. Consumables such as filters, lube oil at the time of servicing during warranty period shall be provided by the buyer. iv. Obtaining necessary approvals, if any, is the responsibility of the buyer.
	Above General Technical Requirements (GTR) / Commissioning	Yes

	have been seen, read, understood and agreed to comply	
SCOPE OF INSTALLATION	Installation	with installation - inclusive in the scope of supply
	Scope of installation for Diesel Generating Set when offered by the vendor - inclusive in the scope of supply(Part-1)	a) Installation of Power Generator when offered by the vendor is inclusive in the scope of supply and shall be done by the seller. The installation work of Power Generator and its constituent parts shall be generally conforming to CPWD General Specification for Electrical Works, Part - VII - latest. b) Foundation shall be constructed by the seller. Foundation shall be of PCC type with the ratio of 4:2:1. The length and breadth of the foundation shall be 300 mm more from the respective length and breadth of the Power Generator. The height of the foundation shall be 400 mm, i.e., 200 mm below and 200 mm above the ground level. All the materials / labour required for foundation work shall be supplied by the seller.
	Scope of installation for Diesel Generating Set when offered by the vendor - inclusive in the scope of supply(Part-2)	c) Supply, laying and termination of interconnecting power and control cable shall be done by the seller. The cable supplied shall be ISI marked heavy duty PVC insulated, armoured cable, with PVC outer Sheath of Type ST-2 (FR Grade, Category C1), with aluminium conductor having insulation of PVC compound type -C, suitable for rated voltage upto and including 1100 volts and conforming to IS: 1554 (Part-1) latest. For 3-Phase Power Generators, 3.5 core or higher core cables shall be used. Total length of the cable supplied by the seller shall be within 30 meters for each Power Generator with manual control panel and within 60 metres for each Power Generator with AMF control panel. The current rating of the cables shall be as indicated below: 2C, 6 Sq mm for Single Phase, 3.5 & 5.0 KVA 2C, 10 Sq mm for Single Phase, 7.5 & 10 KVA 2C, 25 Sq mm for Single Phase, 15 KVA 2C, 35 Sq mm for Single Phase, 20 KVA 2C, 70Sq mm for Single Phase, 25 KVA 2C, 95Sq mm for Single Phase, 30 KVA 2C, 120Sq mm for Single Phase, 40 KVA 4C, 4 Sq mm for Three Phase,
	Scope of installation for Diesel Generating Set when offered by the vendor - inclusive in the scope of supply(Part-3)	d) 10 KVA 4C, 6 Sq mm for Three Phase, 15 KVA 4C, 10 Sq mm for Three Phase, 20 & 25 KVA 4C, 16 Sq mm for Three Phase, 30 KVA 3.5C, 25 Sq mm for Three Phase, 40 KVA 3.5C, 35 Sq mm for Three Phase, 50 KVA 3.5C, 70 Sq mm for Three Phase, 62.5 & 75 KVA 3.5C, 95 Sq mm for Three Phase, 82.5 KVA 3.5C, 120 Sq mm for Three Phase, 100 KVA 3.5C, 185 Sq mm for Three Phase, 125 KVA 3.5C, 300 Sq mm for Three Phase, 160 KVA 3.5C, 2 Run of 120 Sq mm for Three Phase, 180 KVA 3.5C, 2 Run of 150 Sq mm for Three Phase, 200 KVA 3.5C, 2 Run of 185 Sq mm for Three Phase, 225 KVA 3.5C, 2 Run of 240 Sq mm for Three Phase, 250 & 275 KVA 3.5C, 3 Run of 185 Sq mm for Three Phase, 320 KVA 3.5C, 3 Run of 240 Sq mm for Three Phase, 380 & 400 KVA 3.5C, 4 Run of 240 Sq mm for Three Phase, 500, 600 & 750 KVA 3.5C, 6 Run of 240 Sq mm for Three Phase, 900 KVA
	Scope of installation for Diesel Generating Set when offered by the vendor - inclusive in the scope of supply(Part-4)	e) Construction of suitable earthing station and necessary connections shall be done by the seller. All the materials / labour required for construction of earthing station shall be supplied by the seller. The total number of earthing pits/stations shall be 4, i.e., 2 for neutral and 2 for body-earthing. Neutral earthing shall be done with copper Plate and Body earthing shall be done with G.I. plate / Copper. The consignee should choose installation site in such a way that the earthing stations can be made within 10 metres of the Power Generator. Earthing station shall be typically constructed as per prevalent standard practices and shall be generally conforming to CPWD General specification for Electrical Works, Part - VII & Part - I - latest. e) Installation of Fuel Tank including foundation / stand shall be done by the seller. f)The warranty is applicable upto specified value of month/hours whichever occurs first's.
	Above Scope of installation for Diesel Generating Set when offered by the vendor has been seen, read, understood and agreed to comply	Yes
WARRANTY/SERVICES	Warranty on Complete power generator/DG Set	36
	Warranty in running hours	5000
	Number of preventive maintenance visits offered in an year during warranty period (Supply of all consumables is the buyer's responsibility)*	2
	Response Time to attend the complaint during Warranty	2
	Time Duration for Repairing /Replace the defect during Warranty	5
Type of lab which carried out Test of Complete Product to prove the conformity of product as per	Certificates required as per CPCB	

TEST REPORTS	specification	
	Test report Available for (Test/approval)	Type Approval Certificate for the specified rating of the Power Generator from any of the designated agency authorized by CPCB,COP Certificate for engine,Type test report and Endurance test report for Engine as per IS: 10001 latest / IS: 10002 latest,Type test report for Alternator as per IS:13364 (Part-1) latest / IS:13364 (Part-2) latest to prove conformity to the specifications
	Agree to provide all relevant documents Test Report/supporting document /reports etc to the buyer at the time of bidding or on demand	YES

Buyer Defined Additional Specification for DURKATO Power Generator- DG set of 10 AMF Control Panel

Specification	Value
Type of governer	Mechanical

Installation Commissioning and Testing (ICT) details for the above item:

% of Product Cost Payable on Product Delivery	80 %
Min Cost Allocation for ICT as a % of product cost	20 %
Number of days allowed for ICT after site readiness communication to seller	30 Days

Product Specification for DURKATO Power Generator- DG set of 5 AMF Control Panel

Specification	Sub-Spec	Value
Power Generator INSTALLATION CONFIGURATIONS	Power Generator installation configurations as defined in CPWD General Specifications for Electrical works - Part VII (DG Set)	Fixed (Power Generators are permanently installed)"
OUTPUT CAPACITY RATING/ PHASE	Nominal Rated Capacity (kVA)	5
	No of Phase (Single Phase-3-5kVA) (Single Phase or Three Phase-5 & 7-5, 10,15, 20, 25, 30 & 40 kVA) (Three Phase-50 to 900 kVA)	Single Phase
ENGINE	Make of Engine	KOHLER
	Model Number of Engine	KD441
	Capacity of Engine (cc)	441
	Rated Engine Power (kWm)	100 % of the required powered at STP(Standard Temperature Pressure) i.e equal to (Nominal Rated Capacity (KVA) of power generator + Any Auxiliary power Consumption by the Power generator) x Power factor(0.8) / Alternator efficience
	Type of Engine cooling	Air Cooled
	Type of governer	Mechanical
	Number of cylinders (nos)	1
	No of Strokes (nos)	4
Rated RPM of Engine (RPM)	3000	

	Fuel	High Speed Diesel (HSD)
	Overload capacity	Engine is capable of delivering an output of 10% in excess of rated KVA for a period of one hour in any period of 12 hours continuous running
	Specific Fuel Consumption (gm/kWh)	200 to 265
	Starting voltage (volt)	12
	Salient Features of Engine	Turbo Charged Engine, Direct injection Fuel System
GOVERNING CLASS	Class of governor	A2 or better
	"Maximum Change of Speed as a Percentage of Rated Speed on suddenly taking-off the rated load(Transient) "	10
	"Maximum Recovery Time in Seconds on suddenly taking-off the rated load(Transient) "	10
	Maximum Change of Speed as a Percentage of Rated Speed on suddenly taking-off the rated load(Permanent)	3
	"Maximum Change of Speed as a Percentage of Rated Speed On a change of load, both on and off, by all steps of 25 percent of the rated load (Transient) "	3
	"Maximum Recovery Time in Seconds on a change of load, both on and off, by all steps of 25 percent of the rated load(Transient) "	3
	"Maximum Change of Speed as a Percentage of Rated Speed On a change of load, both on and off, by all steps of 25 percent of the rated load (Permanent)	1.5
ALTERNATOR	AC GENERATOR (ALTERNATOR) Make	NSM
	AC GENERATOR (ALTERNATOR) model Number	NSM
	Alternator Voltage Rating	230
	Rating of AC Generator (KVA)	5
	Power Factor of AC generator	0.8
	Efficiency at rated Power factor at 75% of full Load	88
	Conformity to Indian Standard (for Alternator)	Generally conforming to IS:13364 (Part-1) latest (Upto 20 kVA)

	Type of alternator	Brushless
	Voltage Regulation Grade	VG 3
	Alternator IP Rating	IP 23
	Class of Insulation	H
	Salient features of Alternator	NA
CONTROL PANEL	Control Panel	AMF Control Panel
	Control Panel Location	Inside the canopy
	IP Rating of Control Panel	IP 53
	Display meters in the control panel (with appropriate rating and accuracy class) - inclusive in the scope of supply	Multifunctional Digital display meter (displaying Voltage, Current, Frequency, Power Factor)
	Other devices in the control panel (with appropriate rating) - inclusive in the scope of supply	Required switches and cutout,MCB,MCCB,Contactor,Circuit breaker,Battery charger
	Displayed parameters/Features	Engine Speed,Lube oil pressure,Coolant/cylinder head Temperature,Engine running hours,Engine battery voltage,Engine Running status,Generator Voltage (Ph-Ph),Generator Voltage (Ph-N),Generator Current (R, Y, B),Generator apparent Power (kVA),Generator active Power (kW),Powerfactor,Frequency,Fuel level,Event log,Control supply Voltage
	Indicators	Low Lube oil pressure,High water / coolant / cylinder head temperature,Low fuel level,Over speed
	Audio Alarm	Low Lube oil pressure,High water / coolant / cylinder head temperature,Low fuel level,Over speed
ACOUSTIC ENCLOSURE	Acoustic Enclosure (inclusive in the scope of supply)	Yes, Power Generator supplied with Acoustic Enclosure
	Sheet Thickness(mm)	1.6
	Thickness of insulation	20
	Density of insulation (kg/cubic m)	20
	Noise level at 1 meter (dB)	74.5
Fuel Tank	Fuel Tank Capacity	30
	Number of Fuel tank	1
	Fuel Tank Sheet Material Thickness(mm)	2
	Fuel Tank Fabricated Material	M.S Sheet
	Fuel Tank Features	Fuel Tank capacity is sufficient for 8 hrs of running at full load
BATTERY	Battery Type & Specification	"Low Maintenance free to IS: 14257 for high cranking performance"
	Battery capacity (Ah)	45
	No of batteries	1
SALIENT FEATURES	Salient Features of Power Generator	Glass window on Accoustic Enclosure in front of the Control Panel,Emergency Stop outside the Accoustic Enclosure
	Additional Features	NA
	Trailer	NA for Fixed/Skid Mounted Power Generator
	Pay load of the Trailer	0
	Number of Axlels	0

TRAILER	Number of wheels	'NA' for without trailer
	Wheel Tyre size	0
	Brakes	NA for Fixed/Skid Mounted Power Generator
	Trailer Complying to CMVR act and Regulation	NA for Fixed/Skid Mounted Power Generator
	Maximum permissible Speed of Trailer(Km/hr)	0
	Trailer unladen weight	0
	Trailer overall length	0
	Gross Towing Weight (including Power Generator)	0
	Salient Features of trailer	NA
General Technical Requirements (GTR) / Commissioning	General Technical Requirements (GTR) / Commissioning(Part-1)	a) Power Generator shall be complete with Diesel Engine, Alternator and AMF/MANUAL Control Panel along with Acoustic Enclosure. Diesel engine and alternator shall be closely coupled or provided with flexible coupling and mounted on a base plate / M.S. frame of robust in construction.
	General Technical Requirements (GTR) / Commissioning(Part-2)	b) Anti-Vibration mountings shall be provided for complete Power Generator in case of flexible coupling. In case of direct coupling Anti-Vibration mountings shall be provided for the Engine as well as the alternator.
	General Technical Requirements (GTR) / Commissioning(Part-3)	c) Power Generator should have protection against under voltage, over voltage, under frequency, over frequency, low battery voltage, over current, earth-fault, short circuit, phase sequence change etc.
	General Technical Requirements (GTR) / Commissioning(Part-4)	d) Automatic Mains Failure (AMF) control panel, where applicable, shall be able to start up the Power Generator and transfer the load on to the Power Generator on mains failure without requiring any human intervention. Similarly on restoration of mains supply, it shall be able to transfer the load to mains supply and switch off the Power Generator automatically.
	General Technical Requirements (GTR) / Commissioning(Part-5)	e) Control Panel (Manual / AMF), where applicable, shall be equipped with suitable Voltmeter, Ammeter, Frequency meter, power factor meter (these items can be alternatively supplied in one multifunctional digital display meter), battery charger, indicators, various switches and cutout / MCB / MCCB / Contactor / Circuit breaker for the DG output of appropriate rating and accuracy class as per trade practice for better utility.
	General Technical Requirements (GTR) / Commissioning(Part-6)	f) Supply and installation of a change-over Switch / MCCB of suitable rating for Power Generator with manual control panel, where applicable, is inclusive in the scope of supply.
	General Technical Requirements (GTR) / Commissioning(Part-7)	g) Acoustic Enclosure shall be made of Pre-treated and Powder coated CRCA Sheet. The sheet shall be Pre-treated and Powder coated with weather-proof paint. The Acoustic Enclosure shall be vermin proof. The enclosure shall accommodate the (daily service) fuel tank of the Power Generator to make the system compact.
	General Technical Requirements (GTR) / Commissioning(Part-8)	h) Power Generators shall meet the requirements of Environmental (Protection) Rules 1986 as laid down by Min. of Environment & Forests read with GSR 371 (E) dated 17.5.2002,GSR 520(E)dated 1.7.2003 , No.448 (E)dated 12.07.2004 , GSR 771(E) dated 11.12.2013 GSR 232(E)dated 31.03.2014,Gazette Notification No.167 dated. 31.03.2014 and Gazette Notification No. 578 dated. 11.11.2014 in respect of noise and emission norms. The latest amendments to above GSRs shall be applicable as and when amended by Ministry of Environment and Forest.
	General Technical Requirements (GTR) / Commissioning(Part-9)	i) Standard set of tools consisting of a set of 3 spanners, one screw driver, one standard plier and one nose plier of appropriate size shall be provided along with each Power Generator.
	General Technical Requirements (GTR) / Commissioning(Part-10)	j) Supply of Fuel tank of suitable capacity, sufficient for minimum 8 hours running/990 liters(whichever is lower) the Power Generator, is inclusive in the scope of supply. Fuel Tank shall be complete with fuel piping (between fuel tank and diesel engine), valves, level indications and all standard accessories. MS pipes, heavy class of suitable dia conforming to IS 1239 (Part-1) - latest shall be used for fuel piping.
	General Technical Requirements (GTR)	Buyer's Responsibilities: i. Mains ACB for AMF operation shall be provided by the buyer for DG set rating above 600 KVA and above .For DG set other ratings seller shall provide mains and DG contactor/breaker, ii. Exhaust piping, extra civil

	/ Commissioning(Part-11)	work, distribution board shall be provided by the buyer. iii. Consumables such as filters, lube oil at the time of servicing during warranty period shall be provided by the buyer. iv. Obtaining necessary approvals, if any, is the responsibility of the buyer.
	Above General Technical Requirements (GTR) / Commissioning have been seen, read, understood and agreed to comply	Yes
SCOPE OF INSTALLATION	Installation	with installation - inclusive in the scope of supply
	Scope of installation for Diesel Generating Set when offered by the vendor - inclusive in the scope of supply(Part-1)	a) Installation of Power Generator when offered by the vendor is inclusive in the scope of supply and shall be done by the seller. The installation work of Power Generator and its constituent parts shall be generally conforming to CPWD General Specification for Electrical Works, Part - VII - latest. b) Foundation shall be constructed by the seller. Foundation shall be of PCC type with the ratio of 4:2:1. The length and breadth of the foundation shall be 300 mm more from the respective length and breadth of the Power Generator. The height of the foundation shall be 400 mm, i.e., 200 mm below and 200 mm above the ground level. All the materials / labour required for foundation work shall be supplied by the seller.
	Scope of installation for Diesel Generating Set when offered by the vendor - inclusive in the scope of supply(Part-2)	c) Supply, laying and termination of interconnecting power and control cable shall be done by the seller. The cable supplied shall be ISI marked heavy duty PVC insulated, armoured cable, with PVC outer Sheath of Type ST-2 (FR Grade, Category C1), with aluminium conductor having insulation of PVC compound type -C, suitable for rated voltage upto and including 1100 volts and conforming to IS: 1554 (Part-1) latest. For 3-Phase Power Generators, 3.5 core or higher core cables shall be used. Total length of the cable supplied by the seller shall be within 30 meters for each Power Generator with manual control panel and within 60 metres for each Power Generator with AMF control panel. The current rating of the cables shall be as indicated below: 2C, 6 Sq mm for Single Phase, 3.5 & 5.0 KVA 2C, 10 Sq mm for Single Phase, 7.5 & 10 KVA 2C, 25 Sq mm for Single Phase, 15 KVA 2C, 35 Sq mm for Single Phase, 20 KVA 2C, 70Sq mm for Single Phase, 25 KVA 2C, 95Sq mm for Single Phase, 30 KVA 2C, 120Sq mm for Single Phase, 40 KVA 4C, 4 Sq mm for Three Phase,
	Scope of installation for Diesel Generating Set when offered by the vendor - inclusive in the scope of supply(Part-3)	d) 10 KVA 4C, 6 Sq mm for Three Phase, 15 KVA 4C, 10 Sq mm for Three Phase, 20 & 25 KVA 4C, 16 Sq mm for Three Phase, 30 KVA 3.5C, 25 Sq mm for Three Phase, 40 KVA 3.5C, 35 Sq mm for Three Phase, 50 KVA 3.5C, 70 Sq mm for Three Phase, 62.5 & 75 KVA 3.5C, 95 Sq mm for Three Phase, 82.5 KVA 3.5C, 120 Sq mm for Three Phase, 100 KVA 3.5C, 185 Sq mm for Three Phase, 125 KVA 3.5C, 300 Sq mm for Three Phase, 160 KVA 3.5C, 2 Run of 120 Sq mm for Three Phase, 180 KVA 3.5C, 2 Run of 150 Sq mm for Three Phase, 200 KVA 3.5C, 2 Run of 185 Sq mm for Three Phase, 225 KVA 3.5C, 2 Run of 240 Sq mm for Three Phase, 250 & 275 KVA 3.5C, 3 Run of 185 Sq mm for Three Phase, 320 KVA 3.5C, 3 Run of 240 Sq mm for Three Phase, 380 & 400 KVA 3.5C, 4 Run of 240 Sq mm for Three Phase, 500, 600 & 750 KVA 3.5C, 6 Run of 240 Sq mm for Three Phase, 900 KVA
	Scope of installation for Diesel Generating Set when offered by the vendor - inclusive in the scope of supply(Part-4)	e) Construction of suitable earthing station and necessary connections shall be done by the seller. All the materials / labour required for construction of earthing station shall be supplied by the seller. The total number of earthing pits/stations shall be 4, i.e., 2 for neutral and 2 for body-earthing. Neutral earthing shall be done with copper Plate and Body earthing shall be done with G.I. plate / Copper. The consignee should choose installation site in such a way that the earthing stations can be made within 10 metres of the Power Generator. Earthing station shall be typically constructed as per prevalent standard practices and shall be generally conforming to CPWD General specification for Electrical Works, Part - VII & Part - I - latest. e) Installation of Fuel Tank including foundation / stand shall be done by the seller. f)The warranty is applicable upto specified value of month/hours whichever occurs first's.
	Above Scope of installation for Diesel Generating Set when offered by the vendor has been seen, read, understood and agreed to comply	Yes
WARRANTY/SERVICES	Warranty on Complete power genertor/DG Set	36
	Warranty in running hours	5000
	Number of preventive maintenance visits offered in an year during warranty period (Supply of all consumables is the buyer's responsibility)*	2
	Response Time to attend the complaint during Warranty	2
	Time Duration for Repairing /Replace	5

	the defect during Warranty	
TEST REPORTS	Type of lab which carried out Test of Complete Product to prove the conformity of product as per specification	Certificates required as per CPCB
	Test report Available for (Test/approval)	Type Approval Certificate for the specified rating of the Power Generator from any of the designated agency authorized by CPCB,COP Certificate for engine,Type test report and Endurance test report for Engine as per IS: 10001 latest / IS: 10002 latest,Type test report for Alternator as per IS:13364 (Part-1) latest / IS:13364 (Part-2) latest to prove conformity to the specifications
	Agree to provide all relevant documents Test Report/supporting document /reports etc to the buyer at the time of bidding or on demand	YES

Buyer Defined Additional Specification for DURKATO Power Generator- DG set of 5 AMF Control Panel

Specification	Value
Type of governer	Mechanical

Installation Commissioning and Testing (ICT) details for the above item:

% of Product Cost Payable on Product Delivery	80 %
Min Cost Allocation for ICT as a % of product cost	20 %
Number of days allowed for ICT after site readiness communication to seller	30 Days

General Clauses w.r.t RCM/FCM

- Where ever RCM is applicable, for sellers (Regular GST registered seller who opted out of FCM as per notifications of GST like GTA , unregistered seller), Buyer have liability of paying the GST and GST cess to the government on the specified rate mentioned by them in this contract. Seller will invoice buyer with Zero GST and GST cess.
- For Registered sellers as per FCM, rates will be inclusive of prescribed rate of GST and GST cess. ITC available to buyer as shown in the bid document have been applied while evaluating the bids. Seller has liability of paying the GST and GST cess to the govt and same will be charged from buyer while invoice.
- For Registered sellers who opted for RCM while quoting for specified category under section 9(3) like GTA rates will be exclusive of GST and GST cess. GST and GST cess as indicated by the buyer in the bid document payment of GST and GST Cess will be the liability of buyer.
- For Unregistered sellers Liability of payment of GST and GST cess is in Buyers scope. GST and GST cess as indicated by the buyer in the bid document will be the liability of buyer . Unregistered seller will invoice buyer with zero GST and Zero GST cess.
- For sellers under Composition Scheme: There is no liability of payment of GST and GST cess in Buyers cope. Seller will invoice Zero GST and GST cess in the invoice to buyer.

Terms and Conditions

1. General Terms and Conditions-

- 1.1 This contract is governed by the [General Terms and Conditions](#), conditions stipulated to this Product/Service as provided in the Marketplace.**
- 1.2 This Contract between the Seller and the Buyer, is for the supply of the Goods and/ or Services, detailed in the schedule above, in accordance with the General Terms and Conditions (GTC) unless otherwise superseded by Goods / Services specific Special Terms and Conditions (STC) and/ or BID/Reverse Auction Additional Terms and Conditions (ATC), as applicable**

2. Buyer Added Bid Specific Terms and Conditions-

2.1 Scope of Supply:

Scope of supply (Bid price to include all cost components) : Supply Installation Testing and Commissioning of Goods

2.2 Purchase Preference (Centre):

Purchase preference to Micro and Small Enterprises (MSEs): Purchase preference will be given to MSEs as defined in Public Procurement Policy for Micro and Small Enterprises (MSEs) Order, 2012 dated 23.03.2012 issued by Ministry of Micro, Small and Medium Enterprises and its subsequent Orders/Notifications issued by concerned Ministry. If the bidder wants to avail the Purchase preference, the bidder must be the manufacturer of the offered product in case of bid for supply of goods. Traders are excluded from the purview of Public Procurement Policy for Micro and Small Enterprises. In respect of bid for Services, the bidder must be the Service provider of the offered Service. Relevant documentary evidence in this regard shall be uploaded along with the bid in respect of the offered product or service. If L-1 is not an MSE and MSE Seller (s) has/have quoted price within L-1+ 15% of margin of purchase preference /price band defined in relevant policy, such Seller shall be given opportunity to match L-1 price and contract will be awarded for percentage of 25% of total value.

2.3 Certificates:

The bidder is required to upload, along with the bid, all relevant certificates such as BIS licence, type test certificate, approval certificates and other certificates as prescribed in the Product Specification given in the bid document.

Note: This is system generated file. No signature is required. Print out of this document is not valid for payment/ transaction purpose.