

भारत सरकार/Government of India अंतरिक्ष विभाग/Department of Space दव नोदन प्रणाली केंद्र LIQUID PROPULSION SYSTEMS CENTRE एच ए एल II स्टेज, 80 फीट रोड HAL II STAGE, 80 FEET ROAD, बेंगलूरु/BANGALORE-560 008. फोन सं./Phone No.080 25037171 ई-मेल/Email:purchase@lpscb.gov.in



दिनांक/Date: 25.03.2024

सीमित निविदा सूचना सं. एलबी2023000423-01 दिनांक 25.03.2024 LIMITED TENDER NOTICE NO. LB2023000423-01 DATED 25.03.2024

द्र नो प्र कें(बें), आई टी पी एफ तुमकुरु परिसर में डीजल जनरेटर की आपूर्ति, इसके संस्थापन, परीक्षण एवं प्रवर्तन के लिए निविदा।

Tender for Supply, Installation, Testing and Commissioning of Diesel Generators at LPSC(B), ITPF Campus Tumakuru.

निविदा वर्गीकरण/Tender Classification: सीमित निविदा /LIMITED TENDER – दो भाग/TWO PART निविदा की निर्धारित तिथियाँ/TENDER SCHEDULE

बोली प्रस्तुति की आरंभिक तिथि/Bid Submission Start Date : 21.03.2024 17:01 बोली स्पष्टीकरण की नियत तिथि/Bid Clarification Due Date **:** 28.03.2024 14:01

बोली प्रस्तुतीकरण की नियत तिथि/Bid Submission Due Date : 11.04.2024 14:01 बोली खुलने की तिथि/Bid Opening Date

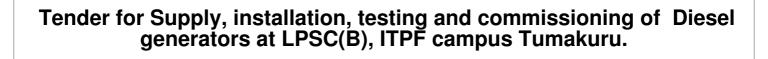
मूल्य बोली खुलने की तिथि / Price Bid Opening Date : 25.04.2024 14:01

निविदा दस्तावेज़ https://www.isro.gov.in/ OR https://eproc.vssc.gov.in या इसरो ई-प्रापण पोर्टल से डाउनलोड किए जा सकते हैं।/Tender documents can be downloaded from https://www.isro.gov.in/ OR https://eproc.vssc.gov.in_or ISRO E-Procurement Portal.

> हस्ताक्षरित/Signed क्रय व भंडार अधिकारी/Purchase & Stores Officer

: 11.04.2024 15:01

GOVERNMENT OF INDIA DEPARTMENT OF SPACE LIQUID PROPULSION SYSTEMS CENTRE (LPSC-B) BANGALORE



Bids to be submitted online

Tender No.: LPSC-B/Liquid Propulsion Systems Centre, Bengaluru/LB202300042301 dated 21-03-2024

A. Tender Details

LPSC-B/Liquid Propulsion Systems Tender No:

Centre, Bengaluru/LB202300042301

Tender Date: 21-03-2024

Tender Classification: **WORKS**

Purchase Entity: Liquid Propulsion Systems Centre, Bengaluru

LIQUID PROPULSION SYSTEMS CENTRE (LPSC-B) Centre:

Supply, installation, testing and commissioning of Diesel generators at LPSC(B), ITPF campus Tumakuru.

Supply, installation, testing and commissioning of Diesel generators at LPSC(B), ITPF campus Tumakuru.

A.1 Tender Schedule

Bid Submission Start Date: 22-03-2024 16:00

Bid Clarification Due Date: 05-04-2024 17:00

Bid Submission Due Date: 11-04-2024 14:01

Bid Opening Date: 11-04-2024 14:30

Price Bid Opening Date: 25-04-2024 14:01

Tender No: LPSC-B/Liquid Propulsion Systems Centre, Bengaluru/LB202300042301

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B. Tender Attachments

Technical Write-up/Drawings

Document: Format for list of ongoing works and completed works

Document : Annexure-I Technical specification

Document : GTP 02 Guaranteed Technical particulars- 02

Document : GTP 01 (Guaranteed Technical particulars-01

Document: Commercial terms and conditions

Document: Annexure-II Technical specification

Instructions To Vendors

Tender No: LPSC-B/Liquid Propulsion Systems Centre, Bengaluru/LB202300042301

C. Bid Templates

- C.1 Technical Bid Supply, installation, testing and commissioning of Diesel generators at LPSC(B), ITPF campus Tumakuru.
- 1. Diesel Generator Set with Acoustic Enclosure Supply, Installation, Testing and Commissioning [SITC] of 2000 kVA Diesel Generator (DG) set

Item specifications for Diesel Generator Set with Acoustic Enclosure

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Supply, Installation, Testing and Commissioning [SITC] of 2000 kVA Diesel Generator (DG) set including transportation, loading, unloading, storage at site and allied electrical works for ITPF, LPSC(B)/ ISRO, Tumakuru (Detailed specification in Annexure-I & Annexure-II) Supply of 415V, 50 HZ, 3 phase, 4 wire diesel generator set enclosed inside a suitable acoustic enclosure.		-		

2	Diesel engine shall be complete with necessary controls and safety devices conforming to relevant ISS/ BSS with latest amendments. Diesel Engine shall be suitable for Prime duty operation of generator set duty inclusive of fly wheel, flexible coupling, air cleaner, corrosion resistor, radiator, fan with guard, fuel pump, fuel filter, Electronic governor, electrical starting system with starter, 24 V battery, voltage regulator, instrument panel, kwh meter with RPM indicator,	-	
3	Exhaust silencer, protections against low lubrication oil pressure, high water temperature. Alternator shall be 415V, 3phase, 50Hz, 4 wire, 0.8 power factor self-excited, self-regulated, brushless type, drip proof conforming to IS: 4722 with latest amendments. The engine and alternator shall be coupled over a sturdy common base frame.	-	

DG set shall consist of Floor mounted, dust & vermin proof, indoor type Control panel shall be consisting of ACB/MCCB of suitable normal current rating, with combined overload and earth fault protective relays/releases, voltmeter with selector switch, ammeter of suitable range with selector switch, frequency meter, Energy meter, CTs indicating lamps with fuse and switch control, complete with necessary inter connections fuses,		
labels and other accessories such as 990 Ltrs capacity, float operated 2 level switch (Low & High) and adaptor box suitable for termination for 3.5C X400Sqmm Al. Armoured power cables. Day fuel tank apart from built in fuel tank in the Acoustic enclosure if any, with necessary fuel hoses to the engine flow meters, including supply of lube oil, coolant for DG set, all as per detailed specification complete as required.		

6	Installation, Testing and commissioning of DG sets on existing foundation including supply and fixing of antivibration mountings of suitable capacity complete as required. Testing and commissioning as per relevant IS specifications and as directed by EIC. (including supply of required fuel for 12 hrs load testing at site).	-	
7	The scope of work also includes obtaining necessary Statutory Approvals for operation of DG set: Liasion charges for obtaining consent for operation of DG under Pollution Control Board. Liasion charges for obtaining approval from CEIG for operation of DG Set from ADDL.Chief Inspectorate.	-	

2. DIESEL GENERATOR: Exhaust System Accessories: Supply and installation of 500mm dia (NB)exhaust pipe of thickness not less than 5mm thick

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	with supply of all required materials complete as required		-		

- 3. DIESEL GENERATOR: Exhaust System Accessories: Supply and installation of 500mm dia (NB) MS bend with all necessary accessories.
- 4. DIESEL GENERATOR: Exhaust System Accessories: Providing Thermal insulated mineral wool/ rack wool/ glass wool of min 50mm thick lagging with chicken mesh and 24 gauge aluminum

Item specifications for DIESEL GENERATOR

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	cladding over the 500 mm dia (SB) exhaust pipe including supply of all required materials complete as required		-		

- 5. DIESEL GENERATOR: Exhaust System Accessories: Providing insulation and 24 gauge aluminum cladding for hospital grade silencer of 2MVA DG set including supply of all required materials complete as required.
- 6. DIESEL GENERATOR: Exhaust pipe support & chimney: Supply, Installation, testing and Commissioning of self Supporting MS steel Structure as common chimney of height 30 mtrs suitable for DG sets, 415 V DG sets

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	(Height of chimney shall be as required by pollution control board) Exhaust Chimney of 30 Mtr. Height with exhaust gas flow, exhaust gas velocity & wind pressure suitable for Bengaluru condition. The work includes necessary 1 coat of red oxide & enamel paint including supply of all required materials complete as required.		-		

2	The scope also includes Crane charges for lifting of Exhaust structure, necessary exhaust pipe supports, with necessary heat resistant painting exposed exhaust piping outside the building. The end of the exhaust pipe shall have end cowl for protection from rain and birds screens complete as required.		-		
incl	IESEL GENERATOR: Fueluding necessary valves at tank to the engine.	nd accessori	es required for		

	1		I	ı	1
SI No	Specification	Value	Compliance	Offered Specification	Remark
1	The pipe shall be painted with primer over which 2 coats of approved color paint shall be applied.,		-		
2	supply of fixing accessories, control valves, necessary piping accessories, necessary supports, plastic emulsion painting and all required materials complete as required.		-		

8. DIESEL GENERATOR: Earthing: GI Pipe Earthing: Providing 3.5Mtr Long 40mm dia GI pipe earth for earth stations with GI medium class (Class B) GI pipe with ISI marking,

SI No	Specification	Value	Compliance	Offered Specification	Remark	
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1	conforming to IS: 3043 with latest amendments and as per drg. No.CED/ELE/S/3 and including excavation and refilling of earth and supply of all materials and providing chamber with necessary civil works using good quality bricks, sand etc.	-	
2	with a cover plate made of GI /RCC for the chamber with all necessary materials complete as required.	-	
3	Note: Pipe earth used for earthing shall be "Medium" class with ISI marking and one single unwelded piece. SS bolts should be used. (For Body earth)	-	

9. DIESEL GENERATOR: Earthing: Copper Plate Earthing: Providing 3.5 Mtr depth with copper plate earth station earth station with 600x600x3.15mm electrolytic tinned copper plate, conforming to IS: 3043 with latest amendments

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	and as per drawing No. CED/ELE/S/4 including excavation and refilling of earth and supply of all materials and providing chamber with necessary civil works using good quality bricks, sand etc. with a cover plate made of GI/RCC for the chamber with all necessary materials complete as required.		-		

10. DIESEL GENERATOR: Earthing: Supply and laying of electrolytic copper/GI strip of following sizes including supply and fixing using MS/AI spacers, saddles,

Item specifications for DIESEL GENERATOR

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	welding with all fixing materials required when laid inside the building and inclusive of excavation and refilling of earth		-		
2	when laid outside the building and tinning of all joints & termination interconnection with earth pit and equipment in an approved manner as per IS 3043 (with latest amendments) inclusive of supply of all hardwares complete as required.		-		
3	50 x 6 mm Cu strip (for neutral earthing)		-		

11. DIESEL GENERATOR: Earthing: Supply and laying of electrolytic copper/GI strip of following sizes including supply and fixing using MS/AI spacers, saddles,

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	with all fixing materials required when laid inside the building and inclusive of excavation and refilling of earth when laid outside the building and tinning of all		-		

2	joints & termination interconnection with earth pit and equipment in an approved manner as per IS 3043 (with latest amendments) inclusive of supply of all hardwares complete as required.	-	
3	50 x 6 mm GI strip (for body earthing)	-	

12. DIESEL GENERATOR: Cabelling: Supply of 1.1 kV grade, 3.5C/4C XLPE insulated and overall sheathed, stranded aluminum/copper conductor, flat steel strip/ wire armoured cables

Item specifications for DIESEL GENERATOR

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	conforming to IS:7098/Part I (with latest amendments) and following sizes. The cable shall bear ISI certification mark and sequential marking of length at every one meter.		-		
2	3.5C x 400 Sq.mm, 1.1kV Al conductor cable. (from DG to DG control panel and from DG panel to MV panel)		-		

13. DIESEL GENERATOR: Cabelling: Supply of multi core, stranded copper conductor, PVC insulated, PVC overall sheathed, armoured (flat steel strip/ wire armoured),

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	1.1kV grade, for following sizes complete as required. The Cable shall bear ISI certification mark. 2C x 2.5 Sq.mm, 1.1kV Cu conductor cable		-		

14. DIESEL GENERATOR: Cabelling: Supply of multi core, stranded copper conductor, PVC insulated, PVC overall sheathed, armoured (flat steel strip/ wire armoured),

Item specifications for DIESEL GENERATOR

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	1.1kV grade, for following sizes complete as required. The Cable shall bear ISI certification mark. 4C X2.5Sqmm ,1.1kV Cu conductor cable		-		

15. DIESEL GENERATOR: Cabelling: Supply of multi core, stranded copper conductor, PVC insulated, PVC overall sheathed, armoured (flat steel strip/ wire armoured),

Item specifications for DIESEL GENERATOR

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	1.1kV grade, for following sizes complete as required. The Cable shall bear ISI certification mark. 12C x 2.5 Sq.mm, 1.1kV Cu conductor cable		-		

16. DIESEL GENERATOR: Cabelling: Supply of multi core, stranded copper conductor, PVC insulated, PVC overall sheathed, armoured (flat steel strip/ wire armoured),

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	1.1kV grade, for following sizes complete as required. The Cable shall bear ISI certification mark. 2C x 4 Sq.mm, 1.1kV Cu conductor cable		-		

17. DIESEL GENERATOR: Cabelling: Laying of 3.5 core, 1.1 kV grade FRLS cables /XLPE cables
armoured / unarmoured, aluminum/copper conductor cables in ground, in all kind of soil,
750mm below ground level

Item specifications for DIESEL GENERATOR

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	including transportation of cable to site excavation, refilling with sand and baked bricks On top and sides and providing cable route/joint markers complete as per specification and as per drawing no: CED/ELE/S/8 and 10.		-		
2	3.5C x 400 Sq.mm, 1.1kV Al conductor cable. (from DG to DG control panel and from DG panel to MV panel) (8 Runs)		-		

18. DIESEL GENERATOR: Cabelling: Laying of following 1.1 kV grade FRLS cables XLPE cables armoured, copper conductor cable in existing trench/on cable tray, on wall/floor/ceiling/above false ceiling / below false floor / existing

	Hume pipe / existing HDPE pipe including transportation of cable to site, removing of trench /false ceiling/ false flooring covers and reclosing the covers		
1	removing of trench /false ceiling/ false flooring covers and	-	
2	2C x 2.5 Sq.mm, 1.1kV Cu conductor cable	-	

19. DIESEL GENERATOR: Cabelling: Laying of following 1.1 kV grade FRLS cables XLPE cables armoured, copper conductor cable in existing trench/on cable tray, on wall/floor/ceiling/above false ceiling / below false floor / existing

Item specifications for DIESEL GENERATOR

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	HDPE pipe including transportation of cable to site, removing of trench /false ceiling/ false flooring covers and reclosing the covers after laying the cables in good condition with supply of all necessary materials such as brackets, clamps, MS/GI spacers complete as required and as directed by EIC.		-		
2	4C x 2.5 Sq.mm, 1.1kV Cu conductor cable		-		

20. DIESEL GENERATOR: Cabelling: Laying of following 1.1 kV grade FRLS cables XLPE cables armoured, copper conductor cable in existing trench/on cable tray, on wall/floor/ceiling/ above false ceiling / below false floor / existing

Item specifications for DIESEL GENERATOR

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	HDPE pipe including transportation of cable to site, removing of trench /false ceiling/ false flooring covers and reclosing the covers after laying the cables in good condition with supply of all necessary materials such as brackets, clamps, MS/GI spacers complete as required and as directed by EIC.		-		
2	12C x 2.5 Sq.mm, 1.1kV Cu conductor cable		-		

21. DIESEL GENERATOR: Cabelling: Laying of following 1.1 kV grade FRLS cables XLPE cables armoured, copper conductor cable in existing trench/on cable tray, on wall/floor/ceiling/above false ceiling / below false floor / existing

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	HDPE pipe including transportation of cable to site, removing of trench /false ceiling/ false flooring covers and reclosing the covers after laying the cables in good condition with supply of all necessary materials such as brackets, clamps, MS/GI spacers complete as required and as directed by EIC.		-		
2	2C x 4 Sq.mm, 1.1kV Cu conductor cable		-		

22. DIESEL GENERATOR: Cabelling: End Terminations of LT Cables: Providing end terminations for following 1.1kV gradePVC/ XLPE insulated armoured / unarmoured, copper / Aluminum conductor cables including supply of Cable gland lugs,

Item specifications for DIESEL GENERATOR

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	neoprene bushes and other materials and tools required complete with terminal connections, earthing of glands and as required and as directed by EIC.		-		
2	3.5C x 400 Sq.mm, 1.1kV Al conductor cable. (from DG to DG control panel and from DG panel to MV panel)		-		

23. DIESEL GENERATOR: Cabelling: End Terminations of LT Cables: Providing end terminations for following 1.1kV gradePVC/ XLPE insulated armoured / unarmoured, copper / Aluminum conductor cables including supply of Cable gland lugs,

Item specifications for DIESEL GENERATOR

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	neoprene bushes and other materials and tools required complete with terminal connections, earthing of glands and as required and as directed by EIC.		-		
2	2C x 2.5 Sq.mm, 1.1kV Cu conductor cable		-		

24. DIESEL GENERATOR: Cabelling: End Terminations of LT Cables: Providing end terminations for following 1.1kV gradePVC/ XLPE insulated armoured / unarmoured, copper / Aluminum conductor cables including supply of Cable gland lugs,

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	neoprene bushes and other materials and tools required complete with terminal connections, earthing of glands and as required and as directed by EIC.		-		
2	4C x 2.5 Sq.mm, 1.1kV Cu conductor cable		-		

25. DIESEL GENERATOR: Cabelling: End Terminations of LT Cables: Providing end terminations for following 1.1kV gradePVC/ XLPE insulated armoured / unarmoured, copper / Aluminum conductor cables including supply of Cable gland lugs,

Item specifications for DIESEL GENERATOR

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	neoprene bushes and other materials and tools required complete with terminal connections, earthing of glands and as required and as directed by EIC.		-		
2	12C x 2.5 Sq.mm, 1.1kV Cu conductor cable		-		

26. DIESEL GENERATOR: Cabelling: End Terminations of LT Cables: Providing end terminations for following 1.1kV gradePVC/ XLPE insulated armoured / unarmoured, copper / Aluminum conductor cables including supply of Cable gland lugs,

SI No	Specification	Value	Compliance	Offered Specification	Remark	
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1	neoprene bushes and other materials and tools required complete with terminal connections, earthing of glands and as required and as directed by EIC.	-	
2	2C x 4 Sq.mm, 1.1kV Cu conductor cable	-	

27. DIESEL GENERATOR: Safety Items: Safety Items with 1 No First Aid Kit, 1No shock Treatment Chart (laminated), 1No DCP Type Fire Extinguisher of 4.5 Kgs., 1No Rubber mat (1m x 2m) 6mm thick & 2Nos Fire Buckets with stand.

28. DIESEL GENERATOR: Supply, Installation, Testing and Commissioning [SITC] of 500 kVA Diesel Generator (DG) set including transportation, loading, unloading, storage at site and allied electrical works for ITPF, LPSC(B)/ ISRO,

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	Tumakuru (Detailed specification in Annexure-I & Annexure-II) Supply of 415V, 50 HZ, 3 phase, 4 wire diesel generator set enclosed inside a suitable acoustic enclosure. Diesel engine shall be complete with necessary controls and safety devices conforming to relevant ISS/ BSS with latest amendments. Diesel Engine shall be suitable for Prime duty		-		

operation of generator set duty inclusive of fly wheel, flexible coupling, air cleaner, corrosion resistor, radiator, fan with guard, fuel pump, fuel filter, Electronic governor, electrical starting system with starter,24 V battery, voltage regulator, instrument panel, kwh meter with RPM indicator, Exhaust silencer, protections against low lubrication oil pressure, high water temperature.		-		
Alternator shall be 415V, 3phase, 50Hz, 4 wire, 0.8 power factor self-excited, self-regulated, brushless type, drip proof conforming to IS: 4722 with latest amendments. The engine and alternator shall be coupled over a sturdy common base frame.		-		
DG set shall consist of Floor mounted, dust & vermin proof, indoor type Control panel shall be consisting of ACB/MCCB of suitable normal current rating, with combined overload and earth fault protective relays/releases, voltmeter with selector switch, ammeter of suitable range with selector switch, frequency meter, Energy meter,		-		
	generator set duty inclusive of fly wheel, flexible coupling, air cleaner, corrosion resistor, radiator, fan with guard, fuel pump, fuel filter, Electronic governor, electrical starting system with starter,24 V battery, voltage regulator, instrument panel, kwh meter with RPM indicator, Exhaust silencer, protections against low lubrication oil pressure, high water temperature. Alternator shall be 415V, 3phase, 50Hz, 4 wire, 0.8 power factor self-excited, self-regulated, brushless type, drip proof conforming to IS: 4722 with latest amendments. The engine and alternator shall be coupled over a sturdy common base frame. DG set shall consist of Floor mounted, dust & vermin proof, indoor type Control panel shall be consisting of ACB/MCCB of suitable normal current rating, with combined overload and earth fault protective relays/releases, voltmeter with selector switch, ammeter of suitable range with selector switch, ammeter of suitable range with selector switch, frequency	generator set duty inclusive of fly wheel, flexible coupling, air cleaner, corrosion resistor, radiator, fan with guard, fuel pump, fuel filter, Electronic governor, electrical starting system with starter,24 V battery, voltage regulator, instrument panel, kwh meter with RPM indicator, Exhaust silencer, protections against low lubrication oil pressure, high water temperature. Alternator shall be 415V, 3phase, 50Hz, 4 wire, 0.8 power factor self-excited, self-regulated, brushless type, drip proof conforming to IS: 4722 with latest amendments. The engine and alternator shall be coupled over a sturdy common base frame. DG set shall consist of Floor mounted, dust & vermin proof, indoor type Control panel shall be consisting of ACB/MCCB of suitable normal current rating, with combined overload and earth fault protective relays/releases, voltmeter with selector switch, ammeter of suitable range with selector switch, frequency	generator set duty inclusive of fly wheel, flexible coupling, air cleaner, corrosion resistor, radiator, fan with guard, fuel pump, fuel filter, Electronic governor, electrical starting system with starter,24 V battery, voltage regulator, instrument panel, kwh meter with RPM indicator, Exhaust silencer, protections against low lubrication oil pressure, high water temperature. Alternator shall be 415V, 3phase, 50Hz, 4 wire, 0.8 power factor self-excited, self-regulated, brushless type, drip proof conforming to IS: 4722 with latest amendments. The engine and alternator shall be coupled over a sturdy common base frame. DG set shall consist of Floor mounted, dust & vermin proof, indoor type Control panel shall be consisting of ACB/MCCB of suitable normal current rating, with combined overload and earth fault protective relays/releases, voltmeter with selector switch, frequency	generator set duty inclusive of fly wheel, flexible coupling, air cleaner, corrosion resistor, radiator, fan with guard, fuel pump, fuel filter, Electronic governor, electrical starting system with starter, 24 V battery, voltage regulator, instrument panel, kwh meter with RPM indicator, Exhaust silencer, protections against low lubrication oil pressure, high water temperature. Alternator shall be 415V, 3phase, 50Hz, 4 wire, 0.8 power factor self-excited, self-regulated, brushless type, drip proof conforming to IS: 4722 with latest amendments. The engine and alternator shall be coupled over a sturdy common base frame. DG set shall consist of Floor mounted, dust & vermin proof, indoor type Control panel shall be consisting of ACB/MCCB of suitable normal current rating, with combined overload and earth fault protective relays/releases, voltmeter with selector switch, ammeter of suitable range with selector switch, frequency

5	CTs indicating lamps with fuse and switch control, complete with necessary inter connections fuses, labels and other accessories such as 990 Ltrs capacity, float operated 2 level switch (Low & High) and adaptor box suitable for termination for 3.5C X300Sqmm Al.	-	
6	Armoured power cables. Day fuel tank apart from built in fuel tank in the Acoustic enclosure if any, with necessary fuel hoses to the engine flow meters, including supply of lube oil, coolant for DG set, all as per detailed specification complete as required.	-	
7	The Scope inclusive of standard control panel, Instrument panel, AMF panel. The performance of the DG set shall be as per relevant IS standard. The DG set should have acoustic enclosure suitable for outdoor mounting, for rating as approved by Central Pollution Control Board (CPCB).	-	
8	Installation, Testing and commissioning of DG sets on existing foundation including supply and fixing of antivibration mountings of suitable capacity complete as required. Testing and commissioning as per relevant IS specifications and as directed by EIC.	-	

(including supply of required fuel for 12 hrs load testing at site). The scope of work also includes obtaining necessary Statutory Approvals for operation of DG set: Liasion charges for obtaining consent for operation of DG under Pollution Control Board. Liasion charges for obtaining approval from CEIG for operation of DG Set from ADDL.Chief Inspectorate.	-	

- 29. DIESEL GENERATOR: Exhaust System Accessories: Supply and installation of 250mm dia (NB)exhaust pipe of thickness not less than 5mm thick with supply of all required materials complete as required
- 30. DIESEL GENERATOR: Exhaust System Accessories: Supply and installation of 250mm dia (NB) MS bend with all necessary accessories.
- 31. DIESEL GENERATOR: Exhaust System Accessories: Providing Thermal insulated mineral wool/ rack wool/ glass wool of min 50mm thick lagging with chicken mesh and 24 gauge aluminum

SIN	No Specification	Value	Compliance	Offered Specification	Remark
1	cladding over the 250 mm dia (SB) exhaust pipe including supply of all required materials complete as required.		-		

- 32. DIESEL GENERATOR: Exhaust System Accessories: Providing insulation and 24 gauge aluminum cladding for silencer of 500kVA DG set including supply of all required materials complete as required.
- 33. DIESEL GENERATOR: Exhaust pipe support & chimney: Supply, Installation, testing and Commissioning of self Supporting MS steel Structure as common chimney of height suitable

for 500kVA DG sets, 415 V DG sets

Item specifications for DIESEL GENERATOR

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	(Height of chimney shall be as required by pollution control board) Exhaust Chimney with exhaust gas flow, exhaust gas velocity & wind pressure suitable for Bengaluru condition. The work includes necessary 1 coat of red oxide & enamel paint including supply of all required materials complete as required.		-		
2	The scope also includes crane charges for lifting of exhaust structure, necessary exhaust pipe supports, with necessary heat resistant painting exposed exhaust piping outside the building. The end of the exhaust pipe shall have end cowl for protection from rain and birds screens complete as required.		-		

34. DIESEL GENERATOR: Fuel System: Supply & Installation of 40 mm dia. Class 'C' MS pipe including necessary valves and accessories required for the supply and return lines from day fuel tank to the engine.

SI No Specification Value Compliance Offered Specification Remark

The pipe shall be painted with primer over which 2 coats of approved color paint shall be applied, supply of fixing accessories, control valves, necessary piping accessories, necessary supports, plastic emulsion painting and all required materials complete as required.	-		
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overall sheathed, stranded aluminum/copper conductor, flat steel strip/ wire armoured cables conforming to IS:7098/Part I (with latest amendments) and following sizes.

Item specifications for DIESEL GENERATOR

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	The cable shall bear ISI certification mark and sequential marking of length at every one meter. 3.5C x 300 Sq.mm, 1.1kV Al conductor cable. (from DG to DG panel and from DG panel to MV panel)		-		

36. DIESEL GENERATOR: Cabelling: Laying of 3.5 core, 1.1 kV grade FRLS cables /XLPE cables armoured / unarmoured, aluminum/copper conductor cables in ground, in all kind of soil, 750mm below ground level including transportation of cable to site excavation,

SI No	Specification	Value	Compliance	Offered Specification	Remark	
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1	refilling with sand and baked bricks On top and sides and providing cable route/joint markers complete as per specification and as per drawing no: CED/ELE/S/8 and 10.	-	
2	3.5C x 300 Sq.mm, 1.1kV Al conductor cable. (from DG to DG panel and from DG panel to MV panel) (3 Runs)	-	

37. DIESEL GENERATOR: Cabelling: End Terminations of LT Cables: Providing end terminations for following 1.1kV gradePVC/ XLPE insulated armoured / unarmoured, copper / Aluminum conductor

Item specifications for DIESEL GENERATOR

SI No	Specification	Value	Compliance	Offered Specification	Remark
1	cables including supply of Cable gland lugs, neoprene bushes and other materials and tools required complete with terminal connections, earthing of glands and as required and as directed by EIC.		-		
2	3.5C x 300 Sq.mm, 1.1kV Al conductor cable. (from DG to DG panel and from DG panel to MV panel)		-		

Supporting Documents required from Vendor

- 1. Format for list of ongoing works and completed works
- 2. Duly filled (Guaranteed Technical Particulars) GTP 01 & GTP 02
- 3. Documents mentioned as per Commercial Terms & Conditions

additional documents can be uploaded by the vendor	
Tender No : LPSC-B/Liquid Propulsion Systems Centre,Bengaluru/LB202300042301	Page 26 4

C.2 Commercial Terms / Bid

SI. No.	Description	Compliance	Vendor Terms
1	For technical evaluation of the tender, duly filled "Format for list of ongoing works and completed works" shall be submitted by the Vendor. Format is attached.	Yes / No / Explain	
2	2. Vendors shall provide the documents as mentioned in commercial terms & conditions to meet the eligibility criteria to qualify the offer.	Yes / No / Explain	
3	1. Vendors has to submit duly filled documents of GTP 01 and GTP 02. The same will be used for Technical evaluation.	Yes / No / Explain	
4	This is a Two Part Tender. Do not mention price element in Techno Commercial Bid. If any Price element mentioned in technical bid, your offer will not be considered.	Yes / No / Explain	
5	Packing and Forwarding (P&F):P & F charges, if any, (If mentioned as EXTRA OR INCLUDED in your quote, please mention the percentage in Vendor Terms).	Yes / No / Explain	
6	GST for Indigenous Supply:Please mention applicable GST percentage in the offer a) Please refer Sl. No: 1 of Government Of India, Ministry Of Finance, Notification Number 47/2017 integrated Tax (rate) dated: 14/11/2017, the applicable percentage of GST is 5% only for the supply of Goods. Necessary Certificate will be issued later. b) Please refer Sl. No: 1 of Government Of Karnataka, Finance Secretariat, Notification Number 45/2017 FD 48 CSL 2017, BENGALURU, dated: 14/11/2017, the applicable percentage of GST is 5% only for the supply of Goods. Necessary Certificate will be issued later. c) In case of services (i.e., Installation, commissioning & testing and AMC, etc.,) GST @18% extra.	Yes / No / Explain	

7	Duties & Levies for Foreign supply: a) LPSC is providing Customs Duty Concession Certificate towards the of payment of Customs Duty as per the Customs Notification No. 50/2017, Sl. No. 539(b)-CUSTOMS Dated 30.06.2017 & Amendment No: 5/2018, Sl. No. 539(a) CUSTOMS Dated: 25/01/2018. b) We will provide Customs Duty Concession Certificate for bought out items being imported for manufacturing the ordered items (List of items to be imported with quantities to be enclosed along with offer) OR for Orders placed on Foreign Vendors OR for High Sea Sale orders. c) GST is not applicable for imported items.	Yes / No / Explain	
8	Installation Charges:If any, mentioned as EXTRA OR INCLUDED in your quote, please mention the percentage in Vendor Terms.	Yes / No / Explain	
9	Delivery Terms : In case of Indigenous Supplier : LPSC, BANGALORE.	Yes / No / Explain	
10	Delivery Terms : In case of Foreign Suppliers: EX-WORKS / FOB /FCA	Yes / No / Explain	
11	Freight charges: If any, mentioned as EXTRA OR INCLUDED in your quote, please mention the percentage in Vendor Terms.	Yes / No / Explain	
12	Delivery Period: Supply, Installation, testing and Commissioning of Diesel Generator at ITPF Campus, Tumakuru within 7 months from the date of placement of Purchase Order	Yes / No / Explain	
13	Payment Terms for Indigenous Orders: 100% payment shall be made through RTGS within 30 days after receipt (including installation & commissioning) and acceptance of the item at our site.	Yes / No / Explain	

14	Payment Terms for Foreign Orders: a) Payment term shall be Sight Draft OR 90% by Irrevocable Letter of Credit and balance 10% by wire transfer after receipt (including installation & commissioning) and acceptance of the ordered item. b) In case of Payment Term being Letter of Credit, the same shall be opened for One quarter, after readiness of the material. Also, Bank Charges inside India to our Account & outside India to your Account.	Yes / No / Explain	
15	In case two or more tenders are received from an Indian agent on behalf of more than one foreign Principal/OEM, in the same tender for the same item/product will not be considered.	Yes / No / Explain	
16	Liquidated Damages (LD): If the ordered items are not supplied within the delivery schedule, LD shall be levied from your bill @ 0.5% of the order value per week or 0.5% of the value of the stores for which the delivery is delayed for each week of delay subject to a maximum of 10% of the order value. (NOTE: This is a mandatory clause)	Yes / No / Explain	
17	Warranty: Warranty for the offered item shall be from the date of installation/acceptance of the item at our site for a minimum period of one year or as specified in the tender document	Yes / No / Explain	
18	Security Deposit (SD): You have to furnish a Bank Guarantee from a Nationalised / Scheduled Bank in Rs.200/- Stamp Paper for 3% of the order value within 10 days of receipt of order towards the faithful execution of the order valid till the completion of the scope of work as per order plus sixty days(as claim period). (This will be returned to you immediately on execution of the order satisfactorily as per order terms. In case of non-performance / poor performance, the amount will be forfeited).	Yes / No / Explain	

19	Performance Bank Guarantee (PBG): You have to submit a PBG from a Nationalised / Scheduled Bank in Rs.200/- Stamp Paper for 3% of the order value towards the performance of the system at the time of supply valid till the completion of warranty period plus 60 days (as claim period) as per the format provided by the Department. OR 3% of the order value shall be with held till the completion of Warranty Period plus 60 days.	Yes / No / Explain	
20	Security Deposit cum Performance Bank Guarantee (SD cum PBG):In case, if parties are unable to provide two separate BGs i.e. one for SD and one for PBG, they can submit a combined BG for SD cum PBG from a Nationalised / Scheduled Bank in Rs.200/- Stamp Paper within 10 days of receipt of order for 3% of order value valid till the completion of total contractual obligation (i.e. supply period plus warranty period plus 60 days) as per the format provided by the Department.	Yes / No / Explain	
21	Insurance: Being a Government of India Department, Insurance is not required at our cost. Please ensure the safe delivery of the ordered item with proper AIR / SEA / ROAD worthy packing.	Yes / No / Explain	
22	Validity of Offer: (a) The validity of the offers should be 90 days from the date of opening of the tenders. NOTE: Tenders validity period shorter than offer validity mentioned above will not be considered for evaluation.	Yes / No / Explain	

23	In case of foreign orders:(a) Please specify whether any Export clearance is required. If it is required please provide End User Certificate format along with offer. (b) Please specify whether any Agency Commission is involved or not. If YES mention the percentage of Agency Commission. [Agency Commission shall be claimed by the Indian Agent through an Invoice. The Agency Commission shall be paid to the Indian Agent in Indian Rupees worked out on the basis of Telegraphic Transfer buying rate of exchange prevailing on the date of placement of the Purchase order/Contract and shall be paid within 30 days from the date of satisfactory acceptance of the item at our site. Distributers are not eligible for Agency Commission]	Yes / No / Explain	
24	Arbitration: In the event of dispute or difference arising out of or in connection with this purchase order/contract, which cannot be resolved through amicable settlement by mutual consultation, the same shall be settled under the Rules of Arbitration & Conciliation act 1996 under the Indian statue only, whose decision shall be final and binding on both the parties.	Yes / No / Explain	
25	Jurisdiction: The Courts in and around the City of Bangalore alone shall have jurisdiction to deal with and decide any matter or dispute whatsoever arising out of this agreement including those arising under the Arbitration Act.	Yes / No / Explain	
26	Details of Principal: Address, contact details like Telephone Number, Fax, e-mail etc., (if applicable)	Yes / No / Explain	
27	Details of Indian Agent: Address, contact details like Telephone Number, Fax, e-mail etc., (if applicable)	Yes / No / Explain	
28	Address, contact details like Telephone Number, Fax, e-mail etc., on which order to be placed.	Yes / No / Explain	
29	Offers received through fax or email or unsigned will not be considered.	Yes / No / Explain	
30	You shall provide suppliers bank details such as name of the bank, IFSC code, IBAN Number, SWIFT etc., along with your offer which shall be not be changed till completion of payment.	Yes / No / Explain	

31	FORCE MAJEURE: Neither LPSC, Bangalore nor party shall be considered in default of the performance of their obligations under this Purchase Order if such performance is prevented or delayed for any causes beyond the reasonable control of the parties to the order getting affected, such as Acts of God, war, riots, civil, commotion, illegal strikes, legal lockouts, epidemics, fore accidents of any Government thereof, provided notice in writing of any such cause with necessary proof that the obligation under the Purchase Order is hereby affected or prevented or delayed is given within 14 days from the happening of the event. As soon as the cause of force majeure has ceased to exist, the party whose ability to perform his obligation has been affected shall notify the other party of the actual delay that has occurred due to such force majeure condition.	Yes / No / Explain	
32	Special conditions against Indian Agents submitting quotations in Foreign Currency: (a) Foreign Principals proforma invoice indicating the commission payable to the Indian Agent and nature of after sales service to be rendered by the Indian Agent. (b) Copy of Agency agreement with the Foreign Principal and Indian agent, precise relationship between them and their mutual interest in the business. (c) Copy of registration and item empanelment of the Indian agent.	Yes / No / Explain	
33	The tenders received from Indian agents on behalf of their foreign Principals/OEMs (in cases where the Principals/OEMs also submit their tenders simultaneously for the same item/product in the same tender) the same will be not be considered.	Yes / No / Explain	
34	Purchase/Preference to MSEs: Purchase/Price Preference shall be extended to the MSEs under the Public Procurement Policy for MSEs formulated under the Micro, Small & Medium Enterprises Development Act 2006. Necessary authenticated documentary evidences shall be submitted along with your offer. NOTE: This is not applicable for foreign Suppliers.	Yes / No / Explain	

35	Price Preference shall be extended to the MSEs under the Public Procurement Policy for MSEs. Such MSEs shall produce documentary proof of registration as per provisions of the Policy ie: registration with District Industries Centre (DIC) or Khadi and Village Industries Commission (KVIC) or Khadi and Industries Board (KVIB) or Coir Board or National Small Industries Commission (NSIC) or Directorate of Handicrafts and Handlooms or Udyog Aadhar Memorandum or any other body specified by Ministry of MSME.	Yes / No / Explain	
36	As far as implementation of public procurement policy (Preference to make in India) Order, 2017 is concerned, the Office Orders vide No. P-45021/2/2017-B.E-II dt. 15.06.2017, which is partially modified by Order No. P-45021/2/2017-PP(BE-II) dt. 28.05.2018, Order No.P-45021/2/2017-PP(BE-II) dt. 29.05.2019, Order No. P-45021/2/2017-PP (BE-II) dt 04.06.2020 and Order No.P-45021/2/2017-PP (BE-II) dt 16.09.2020 and subsequent Amendments issued by the Department for Promotion of Industries and Internal Trade, Ministry of Commerce and Industry and Internal Trade, Ministry of Commerce and Industry regarding Class-I/Class-II local suppliers, Purchase preference, verification of local contents etc shall be applicable to this tender. Therefore, bidders may ensure compliance of the same while submitting tenders.	Yes / No / Explain	
37	Local Content: Declare the Local Content in %	-	
38	Any Other terms	Yes / No / Explain	

C.3 Price Bid

	CL No	14.0	O	Unit Dries	0	Total Drice	Domosile	
l	SI. No.	Item	Quantity	Unit Price	Currency	Total Price	Remark	

1	Diesel Generator Set with Acoustic Enclosure Supply, Installation, Testing and Commissioni ng [SITC] of 2000 kVA Diesel Generator (DG) set	2.00 Sets	-	
2	DIESEL GENERATO R: Exhaust System Accessories: Supply and installation of 500mm dia (NB)exhaust pipe of thickness not less than 5mm thick	120.00 m	-	
3	DIESEL GENERATO R: Exhaust System Accessories: Supply and installation of 500mm dia (NB) MS bend with all necessary accessories.	20.00 Each	-	
4	DIESEL GENERATO R: Exhaust System Accessories: Providing Thermal insulated mineral wool/ rack wool/ glass wool of min 50mm thick lagging with chicken mesh and 24 gauge aluminum	150.00 m	-	

5	DIESEL GENERATO R: Exhaust System Accessories: Providing insulation and 24 gauge aluminum cladding for hospital grade silencer of 2MVA DG set including supply of all required materials complete as required.	4.00 Nos.	-	
6	DIESEL GENERATO R: Exhaust pipe support & chimney: Supply, Installation, testing and Commissioni ng of self Supporting MS steel Structure as common chimney of height - 30 mtrs suitable for DG sets, 415 V DG sets	30.00 Tonnes	-	
7	DIESEL GENERATO R: Fuel System: Supply & Installation of 50 mm dia. Class 'C' MS pipe including necessary valves and accessories required for the supply and return lines from day fuel tank to the engine.	100.00 m	-	

8	DIESEL GENERATO R: Earthing: GI Pipe Earthing: Providing 3.5Mtr Long 40mm dia GI pipe earth for earth stations with GI medium class (Class B) GI pipe with ISI marking,	16.00 Each	-	
9	DIESEL GENERATO R: Earthing: Copper Plate Earthing: Providing 3.5 Mtr depth with copper plate earth station earth station with 600x600x3.1 5mm electrolytic tinned copper plate, conforming to IS: 3043 with latest amendments		-	
10	DIESEL GENERATO R: Earthing: Supply and laying of electrolytic copper/GI strip of following sizes including supply and fixing using MS/AI spacers, saddles,	250.00 m	-	

11	DIESEL GENERATO R: Earthing: Supply and laying of electrolytic copper/GI strip of following sizes including supply and fixing using MS/AI spacers, saddles,	500.00 m	-	
12	DIESEL GENERATO R: Cabelling: Supply of 1.1 kV grade, 3.5C/4C XLPE insulated and overall sheathed, stranded aluminum/co pper conductor, flat steel strip/ wire armoured cables	880.00 m	-	
13	DIESEL GENERATO R: Cabelling: Supply of multi core, stranded copper conductor, PVC insulated, PVC overall sheathed, armoured (flat steel strip/ wire armoured),	150.00 m	-	

14	DIESEL GENERATO R: Cabelling: Supply of multi core, stranded copper conductor, PVC insulated, PVC overall sheathed, armoured (flat steel strip/ wire armoured),	300.00 m	-	
15	DIESEL GENERATO R: Cabelling : Supply of multi core, stranded copper conductor, PVC insulated, PVC overall sheathed, armoured (flat steel strip/ wire armoured),	450.00 m	-	
16	DIESEL GENERATO R: Cabelling: Supply of multi core, stranded copper conductor, PVC insulated, PVC overall sheathed, armoured (flat steel strip/ wire armoured),	150.00 m	-	

17	DIESEL GENERATO R: Cabelling: Laying of 3.5 core, 1.1 kV grade FRLS cables /XLPE cables armoured / unarmoured, aluminum/co pper conductor cables in ground, in all kind of soil, 750mm below ground level	110.00 m	-	
18	DIESEL GENERATO R: Cabelling: Laying of following 1.1 kV grade FRLS cables XLPE cables armoured, copper conductor cable in existing trench/on cable tray, on wall/floor/ceili ng/ above false ceiling / below false floor / existing	150.00 m	-	
19	DIESEL GENERATO R: Cabelling: Laying of following 1.1 kV grade FRLS cables XLPE cables armoured, copper conductor cable in existing trench/on cable tray, on wall/floor/ceili ng/ above false ceiling / below false floor / existing	300.00 m	-	

20	DIESEL GENERATO R: Cabelling: Laying of following 1.1 kV grade FRLS cables XLPE cables armoured, copper conductor cable in existing trench/on cable tray, on wall/floor/ceili ng/ above false ceiling / below false floor / existing	450.00 m	-	
21	DIESEL GENERATO R: Cabelling: Laying of following 1.1 kV grade FRLS cables XLPE cables armoured, copper conductor cable in existing trench/on cable tray, on wall/floor/ceili ng/ above false ceiling / below false floor / existing	150.00 m	-	

22	DIESEL GENERATO R: Cabelling: End Terminations of LT Cables: Providing end terminations for following 1.1kV gradePVC/ XLPE insulated armoured / unarmoured, copper / Aluminum conductor cables including supply of Cable gland lugs,	64.00 Each	-	
23	DIESEL GENERATO R: Cabelling: End Terminations of LT Cables: Providing end terminations for following 1.1kV gradePVC/ XLPE insulated armoured / unarmoured, copper / Aluminum conductor cables including supply of Cable gland lugs,	24.00 Each	-	

24	DIESEL GENERATO R: Cabelling: End Terminations of LT Cables: Providing end terminations for following 1.1kV gradePVC/ XLPE insulated armoured / unarmoured, copper / Aluminum conductor cables including supply of Cable gland lugs,	24.00 Each	-	
25	DIESEL GENERATO R: Cabelling : End Terminations of LT Cables: Providing end terminations for following 1.1kV gradePVC/ XLPE insulated armoured / unarmoured, copper / Aluminum conductor cables including supply of Cable gland lugs,	72.00 Each	-	

26	DIESEL GENERATO R: Cabelling : End Terminations of LT Cables: Providing end terminations for following 1.1kV gradePVC/ XLPE insulated armoured / unarmoured, copper / Aluminum conductor cables including supply of Cable gland lugs,	24.00 Each	-	
27	DIESEL GENERATO R: Safety Items: Safety Items with 1 No First Aid Kit, 1No shock Treatment Chart (laminated), 1No DCP Type Fire Extinguisher of 4.5 Kgs., 1No Rubber mat (1m x 2m) 6mm thick & 2Nos Fire Buckets with stand.	3.00 Each	-	

28	DIESEL GENERATO R: Supply, Installation, Testing and Commissioni ng [SITC] of 500 kVA Diesel Generator (DG) set including transportation , loading, unloading, storage at site and allied electrical works for ITPF, LPSC(B)/ ISRO,	1.00 Sets	-	
29	DIESEL GENERATO R: Exhaust System Accessories: Supply and installation of 250mm dia (NB)exhaust pipe of thickness not less than 5mm thick with supply of all required materials complete as required	40.00 m	-	
30	DIESEL GENERATO R: Exhaust System Accessories: Supply and installation of 250mm dia (NB) MS bend with all necessary accessories.	2.00 Each	-	

31	DIESEL GENERATO R: Exhaust System Accessories: Providing Thermal insulated mineral wool/ rack wool/ glass wool of min 50mm thick lagging with chicken mesh and 24 gauge aluminum	45.00 m	-	
32	DIESEL GENERATO R: Exhaust System Accessories: Providing insulation and 24 gauge aluminum cladding for silencer of 500kVA DG set including supply of all required materials complete as required.	2.00 Nos.	-	
33	DIESEL GENERATO R: Exhaust pipe support & chimney: Supply, Installation, testing and Commissioni ng of self Supporting MS steel Structure as common chimney of height suitable for 500kVA DG sets, 415 V DG sets	6.50 Tonnes	-	

34	DIESEL GENERATO R: Fuel System: Supply & Installation of 40 mm dia. Class 'C' MS pipe including necessary valves and accessories required for the supply and return lines from day fuel tank to the engine.	50.00 m	-	
35	DIESEL GENERATO R: Cabelling: Supply of 1.1 kV grade, 3.5C/4C XLPE insulated and overall sheathed, stranded aluminum/co pper conductor, flat steel strip/ wire armoured cables conforming to IS:7098/Part I (with latest amendments) and following sizes.		-	

Taxes, if any (Percentage)						
Other Cos	sts, if any (Value)					
Installatio	on & Configuration	1				
Common	charges (Applical	ole for all item	s)			
37	transportation of cable to site excavation, DIESEL GENERATO R: Cabelling: End Terminations of LT Cables: Providing end terminations for following 1.1kV gradePVC/XLPE insulated armoured / unarmoured, copper / Aluminum conductor			-		
36	DIESEL GENERATO R: Cabelling: Laying of 3.5 core, 1.1 kV grade FRLS cables /XLPE cables armoured / unarmoured, aluminum/co pper conductor cables in ground, in all kind of soil, 750mm below ground level including	165.00 m		-		