Bid Number: GEM/2022/B/2773268
Dated: 23-11-2022

Bid Document

Bid Details	
Bid End Date/Time	14-12-2022 14:00:00
Bid Opening Date/Time	14-12-2022 14:30:00
Bid Offer Validity (From End Date)	120 (Days)
Ministry/State Name	Ministry Of Petroleum And Natural Gas
Department Name	Oil India Limited
Organisation Name	Oil India Limited
Office Name	Oil India Limited
Total Quantity	2
Item Category	NATURAL GAS ENGINE DRIVEN SILENT (ACOUSTIC) GENERATING SET OF CAPACITY 25 KVA (Q3)
MSE Exemption for Years of Experience and Turnover	No
Startup Exemption for Years of Experience and Turnover	No
Document required from seller	Experience Criteria,Bidder Turnover,Certificate (Requested in ATC),OEM Authorization Certificate,Additional Doc 1 (Requested in ATC),Additional Doc 2 (Requested in ATC),Additional Doc 3 (Requested in ATC),Additional Doc 4 (Requested in ATC) *In case any bidder is seeking exemption from Experience / Turnover Criteria, the supporting documents to prove his eligibility for exemption must be uploaded for evaluation by the buyer
Bid to RA enabled	No
Time allowed for Technical Clarifications during technical evaluation	5 Days
Inspection Required (By Empanelled Inspection Authority / Agencies pre-registered with GeM)	Yes
Inspection to be carried out by Buyers own empanelled agency	Yes
Type Of Inspection	Pre Dispatch
Name of the Empanelled Inspection Agency/ Authority	Board of Officers
Payment Timelines	Payments shall be made to the Seller within **21** days of issue of consignee receipt-cum-acceptance certificate (CRAC) and on-line submission of bills (This is in supersession of 10 days time as provided in clause 12 of GeM GTC)
Evaluation Method	Total value wise evaluation

EMD Detail

Required	No

ePBG Detail

Advisory Bank	ICICI
ePBG Percentage(%)	3.00
Duration of ePBG required (Months).	26

(a). EMD & Performance security should be in favour of Beneficiary, wherever it is applicable.

Beneficiary:
GM - Materials (HoD)
Bank Address: ICICI Bank, Duliajan Branch, IFSC Code- ICIC0000213, Branch Address.: ICICI Bank Ltd, Kunja Bhavan, Daily Bazaar, Duliajan, Dibrugarh, Assam - 786602.
(G C Sarma)

Splitting

Bid splitting not applied.

MII Purchase Preference

MII Purchase Preference	No

Details of the Competent Authority for MII

Name of Competent Authority	Rupak Kalita(Based on Notification no. FP-20013/2/2017-FP-PNG dtd. 17.11.2020 of MoPNG)
Designation of Competent Authority	GM(C&P),Corporate Office (Based on Notification no. FP-20013/2/2017-FP-PNG dtd. 17.11.2020 of MoPNG)
Office / Department / Division of Competent Authority	OIL, C&P (Based on Notification no. FP-20013/2/2017-FP-PNG dtd. 17.11.2020 of MoPNG)
CA Approval Number	OIL 62/C&P/267/2020 (Based on Notification no. FP-20013/2/2017-FP-PNG dtd. 17.11.2020 of MoPNG)
Competent Authority Approval Date	23-11-2022
Brief Description of the Approval Granted by Competent Authority	Oil India Limited has adopted Purchase Preference policy linked with Local Content issued by MOPNG vide notification no. FP-20013/2/2017-FP-PNG dated 17.11.2020 and the original policy was approved by the Cabinet. This policy is applicable for tender value more than Rs. 1.0 Crore to treat the local supplier as Class I, Class II and Non Local Supplier and to extend the benefit of purchase preference accordingly as per policy.

Competent Authority Approval for not opting Make In India Preference : View Document

MSE Purchase Preference

MSE Purchase Preference	Yes

1. 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% (Selected by Buyer)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 100%(selected by Buyer) percentage of total QUANTITY.
2. **Inspection of Stores by Nominated Inspection Authority / Agency of buyer or their authorized representatives**

An independent third party Professional Inspection Body can help buyer in mitigating buyer's risk with pre-dispatch/post-dispatch inspection in order to ensure that equipment, components, solutions and documentation conform to contractual requirements. The buyer has a right to inspect goods in reasonable manner and within reasonable time at any reasonable place as indicated in contract. Inspection Fee/ Charges (as pre-greed between buyer and Inspection Agency) would be borne by the buyer as per their internal arrangement but may be recovered from the seller if the consignment failed to conform to contractual specification and got rejected by the Inspection Officer .If so requested and accepted by the seller , initially seller may pay for inspection charges as applicable and get the same reimbursed from buyer if consignment accepted by the Inspecting Officer . For reimbursement seller has to submit proof of payment to Inspection Agency.

Seller/OEM shall send a notice in writing / e-mail to the Inspecting officer / inspection agency specifying the place of inspection as per contract and the Inspecting officer shall on receipt of such notice notify to the seller the date and time when the stores would be inspected. The seller shall, at his own expenses, afford to the Inspecting officer, all reasonable facilities as may be necessary for satisfying himself that the stores are being and or have been manufactured in accordance with the technical particulars governing the supply. The decision of the purchaser representative /inspection authority regarding acceptance / rejection of consignment shall be final and binding on the seller.

The Seller shall provide, without any extra charge, all materials, tools, labour and assistance of every kind which the Inspecting officer may demand of him for any test, and examination, other than special or independent test, which he shall require to be made on the seller's premises and the seller shall bear and pay all costs attendant thereon.

The seller shall also provide and deliver store / sample from consignment under inspection free of charge at any such place other than his premises as the Inspecting officer may specify for acceptance tests for which seller/OEM does not have the facilities or for special/ independent tests.

In the event of rejection of stores or any part thereof by the Inspecting officer basis testing outside owing to lack of test facility at sellers premises, the seller shall, on demand, pay to the buyer the costs incurred in the inspection and/or test. Cost of test shall be assessed at the rate charged by the Laboratory to private persons for similar work.

Inspector shall have the right to put all the stores or materials forming part of the same or any part thereof to such tests as he may like fit and proper as per QAP/governing specification. The seller shall not be entitled to object on any ground whatsoever to the method of testing adopted by the Inspecting officer.

Unless otherwise provided for in the contract, the quantity of the stores or materials expended in test will be borne by seller.

Inspecting officer is the Final Authority to Certify Performance / accept the consignment. The Inspecting officer's decision as regards the rejection shall be final and binding on the seller.

The seller shall if so required at his own expense shall mark or permit the Inspecting officer to mark all the approved stores with a recognised Government or purchaser's mark.

NATURAL GAS ENGINE DRIVEN SILENT (ACOUSTIC) GENERATING SET OF CAPACITY 25 KVA (2 pieces)

Brand Type	Unbranded

Technical Specifications

Buyer Specification Document	Download

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	1%
Number of days allowed for ICT after site readiness communication to seller	90 Days

Consignees/Reporting Officer and Quantity

S.No.	Consignee/Reporting Officer	Address	Quantity	Delivery Days
1	Krishna Mohan Kumar	786602,Oil India Limited, Duliajan, Assam	2	270

Buyer added Bid Specific Additional Scope of Work

S.No.	Document Title	Description	Applicable i.r.o. Items
1	Technical Specification & BRC View	Technical Specification & BRC	NATURAL GAS ENGINE DRIVEN SILENT (ACOUSTIC) GENERATING SET OF CAPACITY 25 KVA(2)

The uploaded document only contains Buyer specific Additional Scope of Work and / or Drawings for the bid items added with due approval of Buyer's competent authority. Buyer has certified that these additional scope and drawings are generalized and would not lead to any restrictive bidding.

Buyer Added Bid Specific Terms and Conditions

1. **Generic**

   OPTION CLAUSE: The Purchaser reserves the right to increase or decrease the quantity to be ordered up to 25 percent of bid quantity at the time of placement of contract. The purchaser also reserves the right to increase the ordered quantity by up to 25% of the contracted quantity during the currency of the contract at the contracted rates. Bidders are bound to accept the orders accordingly.

2. **Generic**

   Bidder financial standing: The bidder should not be under liquidation, court receivership or similar proceedings, should not be bankrupt. Bidder to upload undertaking to this effect with bid.

3. **Generic**

   Bidder shall submit the following documents along with their bid for Vendor Code Creation:

   a. Copy of PAN Card.

   b. Copy of GSTIN.

   c. Copy of Cancelled Cheque.

   d. Copy of EFT Mandate duly certified by Bank.

4. **Generic**

   Supplier shall ensure that the Invoice is raised in the name of Consignee with GSTIN of Consignee only.

5. **Generic**

   The buyer organization is an institution eligible for concessional rates of GST as notified by the Government of India. The goods for which bids have been invited fall under classification of GST concession and the conditions for eligibility of concession are met by the institution. A certificate to this effect will be issued by Buyer to the Seller after award of the Contract. Sellers are requested to submit their bids after accounting for the Concessional rate of GST.
   Applicable Concessional rate of GST : 12%
   Notification No.and date : 8/2022 - Integrated Tax (Rate) dated 13/07/2022

6. **Generic**

   Upload Manufacturer authorization: Wherever Authorised Distributors are submitting the bid, Manufacturers Authorisation Form (MAF)/Certificate with OEM details such as name, designation, address, e-mail Id and Phone No. required to be furnished along with the bid.

7. **Generic**

   While generating invoice in GeM portal, the seller must upload scanned copy of GST invoice and the screenshot of GST portal confirming payment of GST.

8. **Generic**

   Whereever Essentiality Certificate is applicable (PEL/ML), successful bidder should provide Proforma Invoice for processeing for EC application and material should be dispatche after receiving of EC rom DGH. In view of the same, an ATC may be incorporated in GeM, viz, "BIDDER/OEM must provide Proforma Invoice for processeing for EC application within 225 days from date of issue of GeM Contract and material should be dispatche after receiving of EC rom DGH."

9. **Scope of Supply**

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

10. **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 100% of total value.

11. **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.

12. **Warranty**

    Warranty period of the supplied products shall be 1 years from the date of final acceptance of goods or after completion of installation, commissioning & testing of goods (if included in the scope of supply), at consignee location. OEM Warranty certificates must be submitted by Successful Bidder at the time of delivery of Goods. The seller should guarantee the rectification of goods in case of any break down during the guarantee period. Seller should have well established Installation, Commissioning, Training, Troubleshooting and Maintenance Service group in INDIA for attending the after sales service. Details of Service Centres near consignee destinations are to be uploaded along with the bid.

Disclaimer

The additional terms and conditions have been incorporated by the Buyer after approval of the Competent Authority in Buyer Organization. Buyer organization is solely responsible for the impact of these clauses on the bidding process, its outcome, and consequences thereof including any eccentricity/restriction arising in the bidding process due to these ATCs and due to modification of technical specifications and/or terms and conditions governing the bid. Any clause incorporated by the Buyer such as demanding Tender Sample, incorporating any clause against the MSME policy and Preference to make in India Policy, mandating any Brand names or Foreign Certification, changing the default time period for Acceptance of material or payment timeline governed by OM of Department of Expenditure shall be null and void and would not be considered part of bid. Further any reference of conditions published on any external site or reference to external documents/clauses shall also be null and void. If any seller has any objection/grievance against these additional clauses or otherwise on any aspect of this bid, they can raise their representation against the same by using the Representation window provided in the bid details field in Seller dashboard after logging in as a seller within 4 days of bid publication on GeM. Buyer is duty bound to reply to all such representations and would not be allowed to open bids if he fails to reply to such representations. Also, GeM does not permit collection of Tender fee / Auction fee in case of Bids / Forward Auction as the case may be. Any stipulation by the Buyer seeking payment of Tender Fee / Auction fee through ATC clauses would be treated as null and void.

This Bid is also governed by the General Terms and Conditions

In terms of GeM GTC clause 26 regarding Restrictions on procurement from a bidder of a country which shares a land border with India, any bidder from a country which shares a land border with India will be eligible to bid in this tender only if the bidder is registered with the Competent Authority. While participating in bid, Bidder has to undertake compliance of this and any false declaration and non-compliance of this would be a ground for immediate termination of the contract and further legal action in accordance with the laws.

---Thank You---

ऑयल इंडिया लिमिटेड
(भारत सरकार का उद्यम)
Oil India Limited
(A Government of India Enterprise)
Conquering Newer Horizons

MATERIALS DEPARTMENT
P.O. Duliajan, Dist. Dibrugarh
ASSAM, PIN – 786 602, INDIA
TEL: (+91) 374 - 2808705
E-Mail: *bikramjit_singha@oilindia.in*

ANNEXURE – I

TECHNICAL SPECIFICATION

NATURAL GAS ENGINE DRIVEN SILENT (ACOUSTIC) GENERATING SET OF CAPACITY 25 KVA

QUANTITY: 02 NOS.

SL. NO.	SECTION/SUB-SECTION	DESCRIPTION
1.0	**SCOPE OF SUPPLY**	1.1 The scope of work includes Supply, Installation and Commissioning of Natural Gas Engine Driven Generator sets (GEGs) at OIL's Site with field testing and reliability run. 1.2 The GEG sets of rating and output specified herein shall be all new and shall be housed inside weather-proof acoustic enclosure. Also, it shall be complete with all accessories including electrical control panel (inside the acoustic enclosure), safety devices and shall be mounted on oil-field skid for safe lifting and transportation. 1.3 Rating and output of Generator Set: 25 kVA (20 kWe), 415 Volts 3 phase, 0.8 pf (lag), 50 Hertz, prime duty as per IS/ISO 8528 (Part 1 to 12, Latest Version) Standard with 10% overload capacity.
2.0	**GENERAL REQUIREMENTS**	2.1 The generator set shall be sturdy, rugged, proven and extremely reliable and durable. The generator set shall be suitable for operation in oil and gas field installations with field gas from the oil and gas field, in solo island mode operation and outdoor deployment. 2.2 Electrical loads shall be utilities, induction motors and UPS. 2.3 The generator set shall be suitable for frequent moves from site to site. 2.4 The components of the complete generator set shall be of such design to satisfactorily function under all conditions of operation. 2.5 The entire work of manufacture/fabrication, assembly and installation shall conform to sound engineering practice. The entire installation shall be such as to cause minimum transmission of noise and vibration to the site. 2.6 All equipment and materials to be used in work shall be manufactured in factories of good repute having excellent track record of quality manufacturing, performance and proper after-sales service. 2.7 Bidder shall provide all related components and auxiliaries of generating set as part of the package 2.8 Bidder shall furnish all relevant data of complete package as per **ANNEXURE-III (Data Sheet)**
3.0	**CODES & STANDARDS**	3.1 All equipment in the offer shall conform, but not limited, to the following latest edition of relevant codes & standards. 3.2 ISO 3046/1/ BS5514 or equivalent Indian/ International Standard: Specification for reciprocating internal combustion engines 3.3 IS/ISO 8528 (Part 1 to 12): Reciprocating Internal Combustion Engine Driven Alternating Current Generating Sets 3.4 IS: 10000(Part-iv) (or) (ISO: 3046) (Latest edition): Declaration of power, efficiency, fuel (NG) and lube oil consumption for gas engine. 3.5 IS: 10002: Specification for performance requirement for constant Speed Engines (above 20 kW). 3.6 IS: 12065 Noise limit 3.7 IS: 13364 Specification of Alternator coupled with IC Engines

		3.8 IS: 12075 Vibration 3.9 IS: 4691 Enclosure Protection 3.10 IS: 6362 Cooling 3.11 IS: 2253 Mounting 3.12 In case of bidder's inability to use the mentioned codes and standards, the bidder/manufacturer shall indicate his proposed codes and standards defining in detail for using the same. OIL may review the bidder's proposed codes and standards for approval of the same.
4.0	**SITE CONDITIONS**	The ambient condition of the generator sets shall be: 4.1 Maximum Ambient Temperature : 45°C 4.2 Minimum Ambient Temperature : 05°C 4.3 Maximum Humidity at 21°C : 100 % 4.4 Maximum Humidity at 35°C : 95 % 4.5 Maximum Humidity at 41°C : 70 % 4.6 Maximum Altitude above sea level : 150 Meter
5.0	**COMPOSITION OF FUEL GAS AT SITES & GAS PURIFICATION**	5.1 The composition of Onsite field gas or wellhead gas sourced from nearby oil field is furnished below. Presence of natural gas liquids in the raw gas along with crude and other troublesome impurities is very common. 5.2 The composition of the gas is broadly as under: CONSTITUTION — Range by % VOLUME a) Methane — 85.7 - 93.52 b) Ethane — 2.45 - 6.55 c) Propane — 1.28 - 3.12 d) Nitrogen — 0.53 - 1.21 e) Carbon-dioxide — 0.01 - 0.57 f) Iso-Butane — 0.31 - 0.75 g) N-Butane — 0.4 - 1.14 h) Iso-Pentane — 0.19 - 0.47 i) N-Pentane — 0.17 - 0.38 j) Hexane — 0.34 - 1.16 k) Gravity — 0.6204 -0.6919 l) Gross Calorific Value — 9636.8- 10590.8 Kcal/SCUM m) Net Calorific Value — 8704.3- 9595.4 Kcal/SCUM n) Moisture content — 21.0-120.0LB/MMCFT (336.0-1992.0 KG/MMSCM) **NOTE**: *Though the given methane content is in the range of 85.7 - 93.52% by volume, the bidders shall consider while selecting engine and its configuration, methane content of field gas to be as low as 80% by volume and highly aggressive. The engine shall work trouble free without knocking or pre-ignition and without having to de-rate on ground of gas quality. The field gas shall be fed through scrubber and at 20-30 PSIG at upstream of gas train.* 5.3 A gas scrubber adequate for full load operation of the generator set shall be included in the scope of supply in the fuel system of genset.
6.0	**GAS ENGINE AND GENERATOR SET RATING/ CAPACITY:**	6.1 The generator set shall be rated for a prime power duty of capacity 25 KVA (20 kWe) at 0.8-PF (lag) with an output of 34.8 amperes (minimum) while generating 415 Volt AC, 3-phase, 50 Hz power (at 1500 RPM), and the rated output shall be available at the generator output terminals with the given gas composition as engine fuel. 6.2 The generating set shall meet the latest CPCB norms as per Government of India notifications for Genset run on dedicated Natural Gas (NG). 6.3 Generator set shall be ready-to-use type and suitable to operate on the given gas composition. It shall be configured to accept aggressive raw natural gas/field gas or well head gas. 6.4 The engine should have user friendly engine control display with metering,

		monitoring, diagnosing and protecting features all integrated with the controller of the engine. 6.5 Engine and alternator shall bear Name Plate revealing in it details of ratings published by the OEM of the engine and alternator. **<u>The following clause nos. 6.6 to 6.10 shall be certified by the engine manufacturer:</u>** (Certificate/ declaration from the Engine Manufacturer to be submitted by the bidder) 6.6 Engine rating/ output (w.r.t. compression ratio and rpm) and block load capability, pertaining to the engine with the offer 6.7 The gas engine shall have in-cylinder design to meet the latest CPCB emission norms. 6.8 The engine shall be standard design of the original manufacturer designed primarily for generator set application in accordance with ISO 3046/BS5514/ IS/ISO8528 standards and with high tolerance for variable quality of gaseous fuels (field gas). 6.9 The engine shall be a four-stroke, spark-ignited, radiator cooled, naturally aspirated/turbocharged in-line engine with mechanical governing/Electronic Engine Control Unit (ECU) controller capable of meeting the rated output and duty of the generator set with 1500 RPM as speed, compression ratio not exceeding 12:1 and power of the engine shall be suitable to meet the rated output of the genset. It shall also be capable to operate without any external ventilation system and shall be configured to accept aggressive raw natural gas/field gas or well head gas. 6.10 Engine BHP with natural gas calorific value 970BTU/CFT as engine fuel and at 1500 RPM and Compression Ratio not exceeding 12:1.
7.0	**ALTERNATOR AND CONTROL PANEL AND OTHER ELECTRICAL ITEMS:**	(Refer **SECTION A** for Specification of Electrical Items) **<u>Note:</u>** (i) The specification for electrical items in SECTION A shall have over-riding value and shall be followed for that particular item/work, wherever they differ from specifications given in other annexure. (ii) Engine & Alternator shall be supplied with independent lifting hooks/eye bolts for safe Handling
8.0	**GAS ENGINE FEATURES, COMPONENTS, AND ACCESSORIES:**	The specifications given hereunder are general in nature and shall be subject to the standard practice of the engine manufacturer. However, the ignition and governor with the engine shall be as per the given specification provided under in the respective subsection here under. Bidder/manufacturer shall be responsible for providing gas engine driven generating set as per standard practice with the specified technical requirements suitable for Prime Rated Power (PRP) Operation. 8.1 STARTING SYSTEM - Electrical start complete with batteries. The engine starting system shall include 12 volts/24 volts DC starting motor(s), starter relay, and automatic reset circuit breaker to protect against butt engagement. Batteries shall be maintenance free, lead acid type/ gel based, mounted near the starting motor. Corrosion resistant or coated steel battery rack shall be provided. Required cables shall be furnished and sized to satisfy circuit requirements. 8.2 CHARGING SYSTEM – Suitable independent standard battery charging system as per OEM design for charging of batteries as used in above starting of the engine shall be provided. 8.3 AIR INTAKE SYSTEM - shall include dry type paper filters element and vacuum indicator for servicing air cleaner as per manufacturer standard. Maximum air intake restrictions with clean and choked filters shall be within prescribed limit of the OEM/ manufacturer recommendation for the particular model of the engine. Air cleaners shall be either medium or heavy as per manufacturer standard for gen set application. 8.4 LUBRICATION SYSTEM - forced feed pressure lubrication system with lubrication oil filters with replaceable elements as per manufacturer standard. Necessary gear

		driven oil pump for lubricating oil, oil coolers, priming of engine bearing as per manufacturer recommendations. The sump shall have adequate capacity to continue operation up to 500Hrs. /1000 Hrs. without Lube Oil Change. 8.5 FUEL SYSTEM - fuel system shall comprise isolation valve, gas filter, gas scrubber, gas pressure reducer, solenoid valves, etc. Gas shall be available at around 20-30 psig pressure at gas train inlet. Gas engine shall be suitable to operate at this pressure. 8.6 IGNITION SYSTEM- The ignition system shall be a high energy digital, capacitor-discharge system (preferably Altronic CD200) *or as per Manufacturer's standard* designed for use on small, 1-to-8-cylinder industrial gas engines having the following features: • Universal, low-cost, microprocessor-based programmable configuration to select the feature set appropriate to the application: o Timing curves vs. RPM or analog signal, o Selectable spark energy, o Individual cylinder timing adjustment, o Adjustable overspeed trip, • Comprehensive diagnostics for troubleshooting • Windows™-based terminal program for configuration and monitoring, • Modbus RTU communications and monitoring 8.7 GOVERNOR - The governor (electronic/ mechanical) shall be compatible with the ignition system specified in clause no. 8.6 above and capable of isochronous frequency regulation from no load to full rated load. It shall control engine speed and transient load response to meet ISO 8528 G2/G3 performances and tolerances. It shall be selected, installed, and tested by the engine manufacturer. **Note:** *The engine speed shall be so maintained that frequency variation at constant load including no load shall remain within a band of 1% of rated frequency.* 8.8 ENGINE EXHAUST SYSTEM- a) Exhaust system with smooth bends to create minimum back pressure, with suitable residential grade silencer (at optimum location) to reduce the noise level upto 75 dB and inbuilt Spark Arrestor. The silencer shall have an end inlet and end outlet with its horizontal tail end with 45 degrees downward cut to avoid rainwater entry or with rain cap vertical end. The exhaust flexible shall have its free length when it is installed. The exhaust shall be terminated above the building / enclosure. The termination height shall be calculated with following formula: H = h + 0.2 x square root-over of kVA, where H = Height of termination (in Meter), h = height of Building / Enclosure (in Meter) b) Exhaust piping shall be of MS pipe (Schedule B) conforming to relevant IS. The runs forming part of the factory assembly on the engine flexible connections upto the exhaust silencer shall be exclusive of exhaust piping item. 50mm thick loosely bound resin (LBR) mattress/mineral wool/Rockwool, density not less than 120kg/sq. meter and 0.6mm thick aluminium shall be used for cladding work. Load or stress shall be prevented on the turbocharger. 8.9 NOISE and EMISSION COMPLIANCE: Test certificates towards compliance of noise and emission norms as per latest CPCB II guidelines for gas engine and generator set shall be furnished along with the technical bid. The bid will be liable to be rejected in the event of non-submission of the CPCB compliance certificates.

		8.10 COOLING SYSTEM - System shall be designed for ambient temperature of 40 Deg C. It shall have closed coupled radiator subject to the engine manufacturer's standard design. 8.11 ACCESSORIES: The engine shall be fitted with the following accessories subject to the design of the manufacturer: a) Engine over speed protection. b) Vibration dampeners. c) Non sparking guard for coupling d) Dynamically balanced Flywheel e) Necessary flexible coupling and guard for alternator and engine f) Rain Cap for vertical Exhaust Emission 8.12 INSTRUMENTATION & CONTROLS: Engine shall be provided with the following instruments and controls for the efficient operation and safety. It shall be simple and easy to operate and maintain. All controls shall operate in fail-safe mode. a) Start/ Stop Switch b) Battery Charging Indication c) Lube oil pressure indication, alarm and shut down d) Low lube oil trip indication e) Water temperature indication f) High water temperature indication, alarm and shut down g) RPM indication h) Over-speed indication, alarm and shut down i) Engine hours indication j) Engine Fail System: Engine Stop function shall be possible by two independent devices: (a) Automatic cutting off the gas fuel supply and (b) or as per manufacturer's standard.
9.0	**ACOUSTIC ENCLOSURE**	(Refer **SECTION B** for specification of Acoustic enclosure, Enclosure Illumination and Enclosure Earthing Arrangement.)
10.0	**ONLINE GAS MONITORING SYSTEM**	Continuous Online Gas Monitoring System, as specified here under, shall be installed inside the Acoustic Enclosure. 10.1 Detector / Gas Sensors: Minimum 02 nos. of sensors shall be provided 10.2 Type: IR (Infrared), suitable for detection of Natural Gas (By Volume CH4: 89.538 %, N2: 1.004 %, CO2: 0.543 %, C2H6: 4.132 %, C3H8: 2.491 %, Others: 2.292 %) 10.3 Range: 0 to 100 % LEL 10.4 Operating Temperature: 0 to 50 Deg C 10.5 Display: Digital LCD Display 10.6 Alarm Setting: Variable 10.7 Shut down setting: Variable 10.8 Control system: Suitable control system to be provided for alarm and safety shut down of the engine 10.9 Sensor calibration: Adjustment of Zero & Span on-site Non-Intrusive one man calibration shall have facility to calibrate the instrument on spot without disconnecting from power supply by using any portable hand held intrinsically safe calibrator. 10.10 Detectors must be suitable for hazardous environment i.e., Zone 1 & Zone 2 hazardous area Gas Group IIA & IIB. 10.11 Copy of Test Certificates from any NABL accredited test laboratories for the quoted Detector / Sensors, tested and approved as per relevant Indian/International Standard must be submitted along with the supply, as per OMR 2017
11.0	**SKID**	Engine and Alternator shall be directly coupled or coupled by means of flexoplate /flexible coupling as per manufacturer standard design and both units shall be mounted on a suitable designed common bed plate together with all auxiliaries to ensure perfect alignment of engine and alternator with minimum vibrations. The bed plate shall be

		suitable for installation on suitable anti-vibration mounting system. The bidders are advised to note that the generator set shall be moved frequently from location to location thereby prone to abuse of transportation. The skid/base shall be designed to help protect against damage and misalignment that could result while the unit is being moved. It shall be such that it shall help to isolate the generator set from impact loads that occur during movement and from distortions of the skid/base resulting from rough handling, protecting the generator driveline and its alignment.
12.0	**PAINTING & PACKING**	12.1 Painting shall be done as per standard practice of manufacturer. 12.2 The packing shall be roadworthy for transportation up to site, sufficiently robust to withstand rough handling. 12.3 Boxes/packing cases containing electrical equipment shall be waterproof lined. 12.4 All the matters on the control panel shall be packed separately for mounting at site or mounted in such a manner to prevent transit damage 12.5 All manuals, books, digital items (CDs) shall be separately packed and contained in rigid plastic pouches. 12.6 All manuals, drawings, documents, and digital items of engine shall be packed in one separate container and the container shall be separately handed over to OIL at delivery of the Gen sets.
13.0	**EQUIPMENT DATA SHEET AND NAME PLATE/ MARKING**	13.1 EQUIPMENT DATA SHEET (Refer **ANNEXURE-III** for details of data sought) 13.2 NAME PLATE The following data shall be engraved on the name plate: 13.2.1 Gas Engine: Manufacture's Name, Model, Sl. No. & Year of Manufacture, Rated BHP, Rated RPM, Weight in Kg., OIL's Purchase Order No. 13.2.2 Alternator: Manufacturer's Name, Sl. No: Type & Frame Ref, Rated Output in kVA & kW, Type of Duty, Rated Power Factor, Frequency, Rated Voltage, Number of Phases & Type of Connection, Rated Speed (RPM), Class of Insulation, Excitation Current & Voltage at Rated Out Put, Year of Manufacture &, Weight in Kg., OIL's Purchase Order No. 13.3 Marking: The genset system should be clearly and permanently painted on the outside of the enclosure with the following information: (a) WBS no: *(OIL will provide the WBS no.)* (b) Order no:
14.0	**SPARE PARTS**	14.1 The following spare parts required for two-year operation and maintenance of the engine shall be supplied along with the Order. Bidders shall provide the price, along with the part numbers, of the following spares that we envisage shall be required for maintenance of the genset for at least two years. **<u>Gas Engine</u>**: (i) Spark Plug: 1 complete Set, Per Engine (Total: 2 X no. of cylinders) (ii) Ignition Transformer/coil: 1 complete Set, Per engine (Total: 2 X no. of cylinders) (iii) Set of Lube Oil Filter Elements: 6 Set Per Engine (iv) Set of Air Filter Elements: 6 Set Per Engine (v) Gas filter element (of gas train): 04 nos. Per engine (vi) Gas regulators: 1 complete Set (Stage 1 and Stage 2), Per Engine (vii) Set Of Vee Belts: 1 Set Per Engine (viii) Tappet Cover Gasket set: 4 complete Sets, per engine (ix) Self-Starter: 1 no.

		(x) Battery Charging Alternator: 1 no. (xi) Ignition System (Altronic or as per manufacturer's standard): 1 no. 14.2 The bidder must note that the above-mentioned spares are mandatory maintenance spares and are to be supplied along with the order. 14.3 For electrical spares please refer to **SECTION A**. 14.4 **The cost of the spares as per clause no. 14.1 and 14.3 above should be provided separately and included in the total cost of each genset package; and shall be considered during commercial evaluation of the offer. Price of each individual spares as per clause no. 14.1 and 14.3 is to be provided as per note below.** **Note:** ***The price of these spares must be included in the Total Price of each unit**. However, specific description, part numbers etc. (if available) and unit price of each & every spares shall be provided separately as pdf. document under **"Financial Documents"** while submitting the Price Bids in GeM Portal. **Please note that no price should be mentioned in the Technical Bid.*** 14.5 **RECOMMENDED SPARES** a. The bidder shall furnish a list of spares & components that will be required for regular operation and maintenance, overhauling etc. throughout the life of the equipment complete with price. Annual consumption of each spare should be furnished in a tabular format. The bidder should also provide detailed spare list of all the items including bought out items in the operation and maintenance manuals. The list should include a spare parts list along with OEM part numbers, make & model of the equipment and contact postal address of OEM for all items of the whole unit. b. The bidders must submit a written undertaking (along with the bid) that they would be able to supply all the requisite spares and consumables (including bought out items) for a minimum period of 10 (ten) years from the Certified date of completion/ successful field commissioning of the unit.
15.0	**SUBMITTALS**	15.1 **Following documents shall be submitted along with the technical bid:** (i) Certificate/ declaration from the Engine Manufacturer against clause nos. from 6.6 to 6.10. (ii) GA drawing of Generator Set and Control Panel. (iii) Engine Data Sheet (iv) Manufacturers' product catalogues (v) Acoustic Enclosure Dimensions indicating height, etc. (vi) Exhaust piping arrangement including height of exhaust. (vii) Transient response of frequency and voltage for the generator set. (viii) Auxiliary Equipment - Specification or data sheets, including switchgear, spring type vibration isolators. (ix) Drawings- General dimensions drawings showing overall generator set measurements, mounting location, and interconnect points for load leads, fuel, exhaust, cooling and drain lines. (x) Wiring Diagrams – Electrical Wiring diagrams, schematics of Generator & control panel (xi) Warranty Statements. (xii) Standard Engine Shop Manual (Engine Rebuilding Manual) from Engine OEM: The bidder shall submit, in their technical bid, undertaking for supply of the Standard Engine Shop Manual from OEM in the event of order placed upon it. (xiii) CPCB compliance certificates for emission and noise level. (xiv) Undertaking from:

		a) OEM of Engine and b) OEM of Alternator *(in original on OEM's letter head)* shall be submitted by the bidder along with technical bid, guaranteeing uninterrupted supply of spares and availability of service for at least 10 years with effect from delivery of the Item / product for the item / product to be supplied under the Tender / Order, in the event of placement of order
		15.2 Drawings for approval on award of the order: The following drawings shall be submitted to OIL within one month of placement of the purchase order (Minimum 2 sets of hard copies). The supplier shall get them approved from OIL before start of the manufacturing works. The approval of drawings however does not absolve the contractor not to supply the equipment/materials as per agreement, if there is any contradiction between the approved drawings and agreement. (i) Layout drawings of the equipment to be installed including control cables, fuel / lube oil pipes and supports/structure for exhaust piping, chimney and bus ducts / cable trays. (ii) Drawings including section, showing the details of erection of equipment. (iii) Electrical wiring diagrams from engine-alternator set to electrical control panel, including the sizes and capacities of the various electrical/control cables and equipment. (iv) Dimensioned drawings of Acoustic enclosure/Engine-alternator set and electrical control panel. (v) Drawings showing details of supports for pipes, chimney cable trays, ducts etc. (vi) Any other drawings relevant to the work. 15.3 Documents for submission before the pre-dispatch inspection: Two copies of the Integrated Operation & Maintenance Manual for the complete Generator Set including operating instructions with description and illustration of all switch gear controls & indicators, all generator controls and all engine controls. 15.4 As built Drawings/Documents to be furnished on completion of installation & commissioning: (Quantity of Drawings and Documents to be submitted: 5 set + 1 set X Number of Generating Sets to be supplied): a) Generator set installation drawings giving complete details of all the equipment, including their foundations. b) Line diagram and layout of all electrical control panels giving switchgear ratings and their disposition, cable feeder sizes and their layout. c) Control wiring drawings with all control components and sequence of operations to explain the operation of control circuits. d) Manufacturer's technical catalogues of all equipment and accessories e) Integrated Operation & Maintenance Manual for the complete Generator Set including operating instructions with description and illustration of all switch gear controls & indicators, all generator controls, and all engine controls. f) Engine Shop Manual (Engine Rebuilding Manual): 2(two) Copies only for the entire order quantity. g) Parts Books - that illustrates and list all assemblies, subassemblies, and components, except standard fastening hardware (nuts, bolts, washers, etc.).

		h) Routine Test Procedures - for all electronic and electrical circuits and for the main AC generator. i) Troubleshooting Chart - covering the complete generator set showing description of trouble, probable cause and suggested remedy. j) Wiring Diagrams and Schematics - showing function of all electrical components. k) Alternator Operation, Maintenance & Spare Part Manual. l) Generator Set Test Certificate. m) Certificate that the item has been designed, manufactured, and tested conforming to the requirements & specifications n) OEMs test certificates for individual sub-assemblies (if any). o) Warranty Certificate p) Complete step-by–step Safe Operating Procedure (SOP) for the complete generating set
16.0	**STAGE INSPECTION AND TESTING**	(For inspection and testing of electrical items refer **SECTION A**) OIL as purchaser shall have right to carry out stage inspection and shop visit to inspect the manufacturing progress but such inspection shall not relieve the bidder of his responsibility to ensure that the equipment supplied is free from all manufacturing and other defects and conform to correct specifications.
17.0	**PRE-DISPATCH INSPECTION**	(i) **Pre-delivery inspection shall be performed by OIL to ensure all generating set components, controls, and switchgear are included as specified herein, free from any defects and carry full load tests on every generating set prior to delivery and acceptance. <u>The manufacturer or its representative shall give a notice in advance of minimum four weeks for carrying out pre-delivery inspection and shall arrange staff/fuel/POL and any other consumables for test run at his cost</u>. OIL shall witness such inspection & testing at mutually agreed date**. **<u>To and fro fares, boarding/ lodging and other en-route expenses of OIL's Inspection team for carrying our inspection shall be borne by OIL.</u>** (ii) All major items/ equipment i.e. engine, alternator and associated electrical control panels etc. shall be offered for inspection and testing assembled as unit. (iii) Gensets shall be tested on load banks for the rated KW rating. Testing shall be for a minimum of 1 hour at 80% load, 1 hr. at 100% load, 1 hr. at 110% load. (iv) During testing all controls/ operations safeties shall be checked and proper record shall be maintained by the manufacturer's representative. Any defect/ abnormality noticed during testing shall be rectified. The testing shall be declared successful only when no abnormality/ failure is noticed during the testing. (v) Any defects which become evident during the test shall be corrected by the bidder at his own expense prior to shipment to the jobsite. (vi) The Genset shall be cleared for dispatch to site only when the testing is declared successful by OIL. (vii) A copy of the test results shall be submitted to the OIL at the end of the inspection. Test results shall show manufacturer's tolerances as well as actual parameters recorded.
18.0	**DISPATCH/ SHIPMENT TO SITE:**	The items shall be dispatched only after OIL's satisfactory inspection and advice for dispatch.
19.0	**INSTALLATION AND COMMISSIONING AT SITE**	(i) For installation and commissioning of electrical items refer to SECTION A. (ii) The foundation works required for the installation of the generating sets will be done by OIL. Gas fuel and water supply point will be made available nearest to the generating sets from which points onward the supplier shall extend the lines as per requirement. (iii) Installation and Commissioning of the generating set complete with control panel and Changeover Panel shall be carried out by the supplier at any site located in OIL's Operational Area in Assam and Arunachal Pradesh. (iv) The installation shall be performed in strict accordance with shop drawings, specifications, and the manufacturer's instructions and as per tender specifications. (v) All materials required for installation and commissioning shall be in the scope of the

		supplier. This includes piping required for extension of engine exhaust. (vi) The supplier shall provide all tools and equipment, all safety gadgets for safe work, labour, appliances, apparatus, etc. at his cost required to carry-out the installation and commissioning work. However, OIL may on request, provide arc welding and oxyacetylene cutting set with necessary hot/cold work permits for the above jobs. (vii) The supplier shall be responsible for safety of its personnel and equipment during the installation and commissioning work. (viii) During the installation & commissioning job, the bidder shall strictly ensure that all the cut ends of cables, packing materials, leftover items are removed from site after completion of work. No environmental damage shall be done while carrying out the job. (ix) All equipment manufacturers/representative shall furnish the services of factory-trained personnel as required during installation and through the warranty period to inspect the installation, supervise start-up of equipment installed, and repair the equipment when required. Service requests shall be answered and acted upon promptly. (x) The responsibility for performance to the specifications shall not be divided among individual component manufacturers but must be assumed solely by the bidder (supplier). This includes generating system design, manufacture, test, and having a local supplier responsible for service, parts and warranty for the total system. (xi) Bidders should confirm that installation & commissioning is included in the Technical Bid. (xii) **Cost of Installation & commissioning charges should be quoted separately which shall be considered for evaluation of the offers.** These charges should include amongst others to and from fares, boarding/ lodging, local transport at Duliajan and other expenses of the service personnel during their stay at site.
20.0	**TRIAL RUN AND HANDING OVER TO OIL.**	(i) The generating sets shall be put under trial run for a period of 72 hours following their installation and commissioning. During this period, the generating set should run trouble free from any major/minor troubles and meet the performance standards. A representative of the supplier should be based in Duliajan with no cost to OIL during the trial run period to monitor the performance of the generating sets. (ii) The generator set will be said to have successfully completed the trial run, if no breakdown or abnormal /premature failure of any component of the entire generator set occurs during this period. (iii) Following the successful run-in period, the genset shall be taken over by OIL subject to guarantee/warrantee clause of the tender. This date of taking over of the generator set shall be the date of acceptance /taking over.
21.0	**SERVICE AND WARRANTY**	(i) The supplier shall ensure adequate and prompt after sales service free of cost during warrantee/guarantee period. In case of accessory/component supplied by other manufacturers the supplier shall furnish a guarantee/warranty from the manufacturer for the same before the generator set is taken over. (ii) The nature of after sales service, which can be provided by the bidder, during initial erection and commissioning as also subsequent operation shall be clearly stated in the quotation. (iii) The manufacturer shall have a local authorized dealer who can provide factory trained servicemen, the required stock of replacement parts, technical assistance, and warranty administration. (iv) The manufacturer's authorized dealer shall have sufficient parts inventory to maintain over the counter availability of at least 90% of any normal wear and tear parts. (Belts, hoses, filters, turbines, pumps, safeties, regulators, injectors, gaskets) (v) The manufacturer's authorized dealer shall have factory trained service representatives and tooling necessary to install and commission all provided equipment. **(vi) The warranty period for the Gen set and ancillary equipment shall be a minimum of 18 months from the date of dispatch/shipment or 12 months from the date of commissioning of the equipment whichever is earlier.** (vii) The warranty coverage shall include repair parts, labour, reasonable travel expense necessary for repairs at the jobsite, and expendables (lubricating oil, filters,

		antifreeze, and other service items made unusable by the defect) used during the course of repair or any defects in the engine or alternator during warranty period shall be replaced by the party at his cost without any extra charge to OIL (viii) Running hours shall not be a limiting factor for the warranty coverage by either the manufacturer or the authorized dealer. (ix) Offer received without written warranties as specified shall be rejected in their entirety.
22.0	**ORIENTATION**	The system manufacturer's authorized dealer shall provide a complete orientation for OIL's engineering and maintenance personnel. Orientation shall include both classroom and hands-on instruction. Topics covered shall include control operation, schematics, wiring and diagrams, meters, indicators, warning lights, shutdown system and routine maintenance. Duration of orientation should be minimum of 2 days.
23.0	**GENERAL NOTES TO TECHNICAL SPECIFICATION**	a) All sundry equipment, fittings, assemblies, accessories, hardware items, foundation bolts, supports, termination lugs for electrical connections, cable glands, junction boxes and all other sundry items for proper assembly and installation of the various equipment and components of the generator sets are deemed to have included in the tender, irrespective of the fact that whether such items are specifically mentioned in the tender documents or not. b) The offer shall not be acceptable if the bidder does not quote for all items of the tender, supply, installation, commissioning of all items c) In their offer the bidder must mention their detailed comments pointwise against each point of tender specifications. Any deviation from the tender specification shall be specifically mentioned. Specific type and make of equipment shall be mentioned. All the information required as per tender specifications must be submitted. d) The bidders shall provide overall dimensions of the Genset, Acoustic Enclosure and foundation/installation diagram of the Genset. e) In the event of order, the supplier shall submit to OIL within one month of placement of order all documents and drawings as required against each item. f) The manufacture of the equipment is to be started only after written approval of the drawings / documents by OIL as mentioned in tender against all equipment. g) Bidder must confirm in the Technical Bid that the major equipment such as Gas Engine and Alternator shall have manufacturer's Test Report and Warranty Certificate and the same shall be provided during inspection of the Generator set by OIL.
24.0	**GENERAL NOTES FOR BIDDERS**	(Bidders shall confirm each & every point clearly. <u>Deviations, if any,</u> shall be highlighted in the quotation.) i) Materials shall be brand new, unused & of prime quality. ii) Pre-dispatch/Shipment Inspection & testing charges, if any, must be quoted separately on lump sum basis which shall be considered for evaluation of the offers. To and fro fares, boarding/ lodging and other en-route expenses of OIL's Inspection team for carrying our inspection shall be borne by OIL.
SECTION A		**SPECIFICATION OF ELECTRICAL ITEMS**
1.0	**SPECIFICATION OF ALTERNATOR**	(1) Make of the Alternator shall be within the following: KIRLOSKAR / NGEF / STAMFORD / CROMPTON GREAVES / CATERPILLAR / KATO / GENERAL ELECTRIC, USA / LEROY SOMER / (2) Rated Output: 25 KVA, 0.8 power factor at Specified ambient conditions for utility and motor loads (3) Rated Voltage: 415 Volts ± 5% (4) Armature Winding: 3 Phase, 4 wire type (5) Rated Frequency: 50 Hz ± 3% (6) Power factor: 0.8 lagging (7) Class of insulation: Class F/H but temp rise limited to class B (8) RPM: As per engine rated speed (9) Phase sequence: UVW - phase sequence and direction of rotation shall be clearly marked on the alternator. (10) Duty/load: Continuous duty rated Alternator. (11) Winding Connection: Y connected. Separate neutral terminal required (12) Ambient: Min: 5 ºC Max: 45 ºC, RH 95% max

		(13) Alternators Enclosure Protection: IP 23 (14) Alternators Terminal Box Protection: IP 54 (15) Excitation system: Brush less, self-excited, self-regulated with solid state AVR. Voltage characteristics- VG3 as per Table-1, IS 13364: Part 2: 1992 (Reaffirmed in 2018) (16) Mounting: Foot mounted on Gen set skid that should be mounted on anti-vibration pad. (17) Permissible voltage variation: As per Table-1, IS-13364 (Part-2) (18) Permissible frequency variation: As per IS-13364(Part-2) (19) Frame size: Bidder to confirm (20) Waveform deviation: As per IS-13364 (Part-2) (21) Unbalanced current: As per IS-13364 (Part-2) (22) Short circuit current: As per IS-13364 (Part-2) (23) Cooling: Air cooled by integral fan (24) The brush less alternator shall have exciter and rotating rectifier-bridge mounted on shaft complete with diodes and surge suppressor, main field windings and stator windings. PIV of exciter diodes must be 800 Volts or 8 times the maximum exciter armature operating voltage, whichever is higher. At nominal speed the excitation system must produce sufficient residual voltage in order to ensure self-excitation. (25) All windings shall be made from electrolytic grade copper of high purity. (26) Voltage swing (Transient response): As per IS-13364 (Part-2). (27) The alternator shall be capable of sustaining a 10 % overload for one hour in any 12 hours operation. (28) Total voltage harmonic distortion shall be less than 3 % between phases at no load. (29) The alternator shall be capable of withstanding 1.2 times the rated speed for two minutes without any damage. (30) Alternator stator winding terminals are to be connected to 4 nos. of suitably rated tinned copper terminals, supported on SMC/GRP supports inside the alternator terminal box. (31) The alternator terminal box shall be of suitable size and shall be suitable for terminating power cables of alternator. (32) 2 nos. of earth points are to be provided on both sides of the alternator. (33) Lifting hooks are to be provided for lifting the alternator. (34) AVR shall be suitable for motor loads, VG3 regulation. (35) Alternator windings and AVR shall be suitable for humid atmosphere as per ambient conditions mentioned in the enquiry. (36) Bidder to mention the following information in offer (i) Unbalanced current carrying capacity (ii) Efficiency of the alternator at 25 %, 50 %, 75 % and 100 % load. (iii) Power factor of the alternator at 25 %, 50 %, 75 % and 100 % load. (iv) Dimensional drawings. (37) Alternator frame and enclosure shall be made from MS or Cast steel. (38) The permissible vibration of the alternator shall be as per IS-12075:2008 (Reaffirmed in 2018). (39) The alternator shall conform to the following standards: Latest publications of all IS Standards shall be referred. IS: 12065 Noise limit IS: 12075: 2008 (Reaffirmed in 2018): Mechanical Vibration of Rotating Electrical Machines with Shaft Heights 56 mm and Higher - Measurement, Evaluation and Limits of Vibration Severity IS: 4691 Enclosure Protection IS: 6362 Cooling IS: 2253 Mounting IS: 13364 – Part 2: 1992 (Reaffirmed in 2018): AC Generators Driven by Reciprocating Internal Combustion Engine: Part 2 Rated Above 20 KVA and up to 1250 KVA

2.0	**SPECIFICATION OF GENERATOR CONTROL PANEL:**	2.1 Electrical control panel of the generator set shall be incorporated & installed inside/outside the acoustic enclosure which will accommodate generator circuit breaker (63A MCCB), an on-load change-over switch(100A), protection relays, metering, control and protection devices (CBCT, ELR) etc. The detailed description of the panel is as follows: a) Design of Genset Control Panel shall be compatible for running the generator in both the following conditions. Exact use at site would be at OIL's discretion. i) Generator Neutral solidly grounded without Neutral Grounding Resistor (NGR). ii) Generator Neutral grounded through NGR to restrict neutral current to maximum 750 mA (to comply with CEA Regulation 2010 clause # 100). However, supply of NGR is not in the scope of the vendor. b) Sheet steel clad, self-supporting, floor mounting, cubicle type, dust and vermin proof generating set control panel made of 2mm thick MS CRCA sheet and built upon rigid framework of channels, beams as required, having front and rear hinged doors with danger plate fitted on both sides, lifting lugs on top, ventilation louvers on both sides, bottom detachable gland plates, double earthing studs on two sides, complete with suitably sized zinc passivated hard wares with heavy plain and spring washers. c) The panel doors shall have neoprene rubber gasket. d) The panel shall be designed and manufactured as per IS 8623: Part 3: 1993(Reaffirmed in 2018): Low-Voltage Switchgear and Control gear Assemblies - Part 3: Particular Requirements for Equipment Where Unskilled Persons have Access for Their Use. e) The panel enclosure shall be IP 54. Cooling louvers may be provided at bottom and top of the panel sides. Suitable wire mesh shall be provided on the inner side of the louvers to prevent entry of insects. f) The metal surface of the panel shall be given seven tanks anti corrosion treatment and then powder coated in DA grey colour (Min. 50 micron thick paint). g) The frame shall be able to withstand the stress and vibration during transportation and operation. h) All cable entry shall be from bottom side. Removable gland plates shall be provided for all cables. Height of electrical panel from skid/ floor shall be sufficient for entry of the electrical cable with proper bending radius. i) Genset shall be supplied in ready to use condition, complete with all interconnections like connection between generator terminal to generator breaker etc. 2.2 The detail description of the components of the electrical control panel is as described below: The panel shall broadly have the following compartments/sections: i) Incomer & Bus bar Section ii) Generator Protection Section iii) Generator control section iv) Engine control section v) Change-Over Switch 2.2.1 INCOMER/BUS BAR SECTION - MAIN COMPONENTS: a) <u>Breaker / MCCB</u>: 1 No. 415 V, 63 Amps, 4 pole, MCCB, 25 KA breaking capacity, with inbuilt microprocessor based, adjustable overload & short circuit, earth fault and earth leakage protection, Under voltage trip coil. Earth fault protection can be in-built or separate through separate CBCT and earth leakage sensing relay. Rotary operating handle shall be provided on the panel door for manual operation of MCCB. MCCB shall have suitable indication in case of trip from trip unit of MCCB.

MCCB Make: Legrand/ Siemens/Schneider Electric/ABB.

The MCCB shall trip on the following faults:

(i) Overload, short circuit and earth fault/earth leakage- Tripping from internal trip unit of MCCB
(ii) Over/under voltage & Over /under Frequency- From voltage and frequency relays
(iii) Engine fault (Low lube oil, high water temp, over speed)- Trip contact from engine protection system

b) Busbars: Panel shall have one set of TP & N electrolytic grade, high conductivity, electro tinned copper bus-bars, made from rectangular sections confirming to IS, rated for 600 Amps (Free air rating of sections) and supported at required intervals to withstand short circuit fault levels up to 36 KA for 1 Sec. Rating of neutral bus shall be minimum 50% of phase bus rating. Bus-bar support shall be non- hygroscope GRP/FRP and the Bus-bar shall be insulated with heat shrinkable PVC sleeves.

c) Incoming and outgoing power cables to/from MCCB shall terminate on electrolytic grade, high conductivity electro tinned copper spreader bar/links liberally sized for termination of all power cables. Neutral bar shall also have provision for connection of neutral earth cables. All cables to the panel shall enter through a detachable gland plate (of 3 mm thickness) at the bottom of the panel. All cables shall be terminated through suitably sized single compression glands and connections shall be made through properly rated terminal strips and tinned copper sweating sockets crimped rigidly to the copper conductors.

2.2.2 Generator Protection Section: This section shall have:

a) Built-in long-time overload, short time fault, instantaneous short circuit, earth fault protections- in the MCCB. Earth leakage protection from earth leakage module on MCCB or Earth leakage relay with CBCT. ELR shall be adjustable (sensitivity: 0-3 A, time: 0-5 Sec)

CBCT make: Schneider/Legrand

b) 1 No 3 phase, 4 wire, Microprocessor based, Over and Under Voltage Monitoring Relay for the following protections:

i) Over voltage - 110 %
ii) Under voltage - 85 % with 1- 10 seconds time setting

Make: Telemecanique (Model RM3 TR114VS7 or higher version models) / ProkDvs (Model-LVM11-34-2CF or higher version models)/equivalent model of ABB Ltd/ Schneider / Siemens

c) 1 No. Over and Under frequency monitoring relay from 40 to 60 HZ with accuracy 0.1%, suitable for 415V Trip time 0-10Sec with LED indication, 2NO+ 2NC contact.

Make: ProkDvs (Model -HILO-2C-F or higher version models) / Minilec (FCS D2 or higher version models) / equivalent model of ABB Ltd/ Schneider / Siemens

d) Suitably rated CTs of 100/5 , class 5P10 for above (Make: Kappa / Conzerv/ L&T).

2.2.3 Generator Control Section:

This section shall have:

a) Meters:

- 1 No. Three phase analog Voltmeter with selector switch, Size- 96 X 96 mm2, Class of accuracy 0.5, 0 - 500 V, Auxiliary power supply -230 V AC (Make: AEI/ Conzerv / L&T)
- 1 No. Three phase analog ammeter with selector switch, Size- 96 X 96 mm2, 0-500 Amps, C.T. operated, Auxiliary power supply 230 V AC, class of accuracy -0.5 (Make: AEI/ Conzerv / L&T)
- 1 No. Digital frequency meter, scaled 0-100 Hz, suitable for 240 V AC operation, (Make: AEI / Conzerv / L&T)
- 01 no.- Digital multifunction meter indicating Voltage (V), Current(A), Frequency (Hz), Power factor(pf), Active Power (KW), Reactive Power (KVAR), Energy (KWH), Maximum Demand (MD) with RS-485 capability; make- Siemens (Sentron PAC 3200 or higher version models) / Schneider Group (Model- PM700 higher version models) or equivalent model of ABB, Automatic Electric, Rishabh.
- Suitably rated CTs, CT ratio 100/5, class I for ammeter, kW meter and PF meter (Make: Kappa / Conzerv / L&T.)
- All meters shall be mounted at the front door of the panel.

b) Indications: Following are to be provided:

- "Engine running"
- Power supply "ON" for R, Y & B phases
- "Trip circuit healthy"
- "Tripped on Fault" (Electrical fault - From aux contact of trip unit of MCCB)
- Over/under voltage
- Over/under frequency
- Engine fault
- Set on load

All indication lamps shall be of LED type (Make: Binay/ Technic/ L&T) and shall be mounted in front of the panel.

A separate annunciator window (multi-window) with audible alarm for showing engine and alternator faults, gas alarm etc. shall also be provided.

Push buttons for acknowledging/ resetting alarms, checking healthiness of trip circuits etc. shall also be provided.

c) Fuses:

All meters, indication lamps shall be protected by adequate nos. of HRC instrument fuses / MCBs of suitable rating.

d) Auxiliary relays:

Auxiliary Relays /Contactors shall be provided as per requirement of the control circuits. (Make: Siemens/Telemecanique/ABB/BCH/L&T/Indo-Asian). All relays shall have minimum 2 nos. spare contacts. Number of relays shall be as per the control circuit requirement. Current rating of aux contacts shall be as per control circuit requirement.

Plug in type relays and contactors shall not be used in the control circuitry / panel.

2.2.4 Engine control section:

a) This section shall have:

- Digital RPM meter -1 No.
- Engine alarm and trip condition monitoring
- Engine start/stop controls

- Battery charger circuit
- Emergency stop switch (mushroom head type)

b) The following engine conditions shall give alarm indication:

- Low lube oil pressure (at low set point)
- High water temp. (in case of water-cooled engines)
- Engine over speed (at low set point)
- Low battery voltage

c) In addition, engine shall be stopped with the help of heavy-duty 24V D.C. fuel solenoid on following trip conditions.

- Low lube oil pressure
- High water temp. (in case of water-cooled engines)
- Engine over speed
- High Vibration

d) Push buttons shall be provided for:

- Accept fault
- Reset alarm
- Engine start/ stop
- Lamp test

e) Indication of each of the trips shall be provided in the front multi-annunciator window of the Engine control section. Suitable relay/ timer arrangement shall be provided wherever required.

f) Hooter/alarm to indicate Engine trip on fault

g) All indication/metering/controls shall be mounted in front of the panel.

2.2.5 CHANGE OVER SWITCH:

- Output from the control panel bus bars shall be terminated on a changeover switch. Outgoing cable from the genset shall be connected to the outgoing side of the changeover switch. The other incomer of the changeover shall be reserved for connection to the mains supply / 2nd source.
- Description of the changeover switch is as follows.
- One no. four-pole on load changeover type switch rated for minimum 100 Amp. The switch shall be mounted/accommodated inside the control panel.
- Connection links/spreader bars shall be provided with switch for proper termination of all power cables.
- Power wiring from control panel to COS shall be done by the manufacturer.
- Sufficient space and arrangement shall also be provided in COS enclosure for entry and termination of main power cables (1 from the MCCB, 2nd from other source & third for power supply to the load centre).
- There shall be permanent connection from the MCCB to the Change-over switch(s) by bars / cable(s).

2.3 MOTOR STARTER PANEL (If necessary for operation of GEG as per OEM/manufacturer design)

Manufacturer shall also provide starter panels along with necessary cables for any motors if necessary (e.g. lube oil circulation pump motor, radiator cooling fan motor, enclosure ventilation fan motor etc.) for operation of the GEG sets.

The starter panels as required may be accommodated inside electrical control panel complete with breakers / MCCBs or MPCBs (for power isolation), contactors, thermal overload relays, indication lamps, etc.

2.4 WIRING SCHEME

i) Control voltage for generator control: 240VAC. Potential circuit wiring of the control system shall be done with 1.5 sq mm, flexible copper, 1100V grade PVC insulated wires approved by ISI, TAC, FIA. All wiring shall have copper lugs & terminal blocks as required. Wiring for lighting circuit MCB, power outlet and wiring for CT shall be done with 2.5 sq mm, flexible copper, 1100v grade PVC insulated wires approved by ISI, TAC, FIA & have

		copper lugs. Colour code for wires shall be followed as per IS. Make: Finolex/Havells/ L&T/Polycab. ii) All power and control wiring inside the enclosure shall be done at manufacturer's works with armoured cables or with single core cables laid in metallic conduits/ casings. Heavy duty Single Compression Cable Glands shall be provided at all cable entries for armoured cables. Cables with conduit wiring shall have suitable entry clamp. All cables shall be with stranded copper conductor and shall be of 1100v grade and approved by ISI. iii) All control cable terminal ends shall have suitable heavy duty crimping lugs of tinned copper. Ferrules shall be provided for identification of cables. All components shall be labeled for identification. iv) Separate gland plates shall be provided for power and control cables. v) Separate TB shall be provided for all interconnection cables between control panel and engine. vi) Provision of exhaust blower power supply shall be required if the blower is fitted inside the acoustic enclosure. vii) Power supply arrangement with switching and protection shall be also provided for any auxiliary motor, if installed for genset operation. viii) All auxiliary and main contactors shall be mounted on DIN channel. Plug in relays shall not be used. ix) Engine control wiring shall run from engine to control panel in heavy duty ISI approved galvanized flexible conduit supplied by the party.
3.0	**DOCUMENTS**	3.1 The following Documents / drawings shall be <u>submitted with the offer</u>: i) GA and schematic drawings of alternator and control panel ii) Technical literature of alternator iii) Confirmation that the party agrees to all the points mentioned under electrical specification of generating set. Any deviation from the electrical specifications of the tender shall be specifically mentioned by the party with proper justification. Acceptance of deviations shall be at the discretion of OIL. iv) Type and make of components shall be as per tender. v) The bidder shall also specifically confirm even if there is no deviation in their offer from technical specifications. 3.2 The successful bidder shall <u>obtain approval for the following drawings/documents</u> prior to manufacturing of alternator & control panel within 30 days of placement of order. i) GA drawing ii) Documentary evidence from the manufacturer of generator confirming that the alternator to be supplied shall meet all specifications as mentioned in the order. Technical catalogue of the generator. iii) Detailed power & control wiring diagram, detail enclosure drawings for control panel, Changeover Switch, earthing scheme. iv) Layout plan of the unit showing all parts, cable routes. v) Illumination scheme. vi) Details of power cables, control cable and their routes. vii) Bill of materials. 3.3 Minimum Two sets (Hard Copies) of following <u>as built drawings/documents</u> per genset along with soft copies shall be submitted in bound form along with gensets: i) GA drawing ii) Detailed power & control wiring diagram, detailed enclosure drawings for control panel, earthing iii) Scheme, layout plan of the unit showing all parts. iv) Details of power cables, control cable and their routes. v) Bill of materials of all components. vi) Technical literature of alternator. vii) O&M manual for Alternator and main components of control panel.

		viii) Catalogues of various components. ix) All test certificates for tests done at manufacturer's works for alternator, control panel and complete unit. x) Tests done during commissioning. xi) Guarantee certificate for alternator and control panel. Guarantee shall be for 12 months after commissioning of Gen set or 18 months after supply, whichever is earlier. xii) List of recommended spares with cat nos./part nos. & description for two years' O&M.
4.0	**ELECTRICAL SPARES**	Following spares shall be supplied by the party along with package. 1. AVR Unit for Alternator- One no. per Gen Set. 2. Rotating rectifier assembly fitted with complete set of forward and reverse diodes- One set per Gen set. 3. Generator circuit breaker (63A MCCB)
5.0	**INSPECTION AND TESTING FOR ALTERNATOR AND CONTROL PANEL INCLUDING STARTER PANEL** ***as applicable***	All the routine tests as per IS and load tests of the alternator and the control panel shall be witnessed by OIL's Engineer at respective manufacturer's works. The routine test of the alternator shall include the following minimum tests/ measurements: i) Measurement of winding resistances for generator armature, field, exciter armature and exciter field ii) Measurement of insulation resistance (before and after HV tests) for generator armature and field, exciter armature and field iii) High voltage (HV) test iv) Phase sequence test v) Voltage regulation test vi) Vibration measurement vii) Measurement of noise level viii) Overload test ix) Measurement of open circuit and short circuit characteristics x) All the routine tests and load tests of the control panel, changeover panel and starter panel (if provided) shall be witnessed by OIL engineers at manufacturer's works. The routine test of the panels shall include the following minimum tests/measurements: i) Physical checks & Operation checks of all components ii) HV tests iii) Insulation tests (before and after HV tests) **Intimation for inspection for each item must be sent to OIL at least 15 days in advance.**
6.0	**COMMISSIONING OF ELECTRICAL PART OF THE UNIT**	6.1 Installation and Commissioning of the GEG sets with control panels, Auxiliary Motors (if provided, shall be carried out by the supplier as per NEC, ISI, CEA Regulations 2010 etc. at OIL's field area around Duliajan, Assam (India). Qualified and competent electrical personnel of supplier shall be deputed during installation & commissioning of the generating sets. 6.2 All tools, instruments, test kits, etc. required for the job shall be provided by the supplier. Operational tests of all devises, their settings, shall also be carried out during commissioning job by the supplier. 6.3 Accommodation and travel to site for supplier's all persons shall be arranged by supplier. 6.4 All protective devices shall be tested for proper operation and setting done during commissioning by the commissioning person of the successful bidder. All working persons of party shall possess valid electrical license issued/endorsed by Electrical Licensing Board, Govt. of Assam. 6.5 The Gen set shall be treated as successfully commissioned from electrical side after

		successful load test (reliability run) of the unit at OIL's field site as per details given in Sl. Nos. **15.0**, **19.0** and **20.0** of the detailed description.
7.0	**GUARANTEE**	Generator and control panel components shall be guaranteed for 12 months after commissioning of Gen set or 18 months after supply, whichever is earlier.
SECTION B		**SPECIFICATION OF ACOUSTIC ENCLOSURE**
1.0	**ACOUSTIC ENCLOSURE:**	a) The Acoustic enclosure shall be designed and manufactured conforming to relevant standards suitable for outdoor installation exposed to weather conditions, and to limit overall noise level to 75dB(A) at a distance of 1 meter from the enclosure as per latest CPCB norms under free field conditions. b) The construction shall such that it prevents entry of rainwater splashing into the enclosure and allows free & quick flow of rainwater to the ground in the event of heavy rain. The detailed construction shall conform to the details as under: c) The enclosure shall be fabricated out of the CRCA sheet of thickness not less than 1.6mm on the outside cover with inside cover having not less than 0.6mm thick perforated powder coated CRCA sheet. d) The hinged door shall be made from not less than 16SWG (1.6mm) thick CRCA sheet and shall be made airtight with neoprene rubber gasket and heavy-duty locks. e) All sheet metals parts shall be processed through 7-tank process. f) The enclosure shall be powder coated. g) Ventilation fans shall be provided, exhaust piping inside the enclosure must be lagged (except bellows). h) Temperature rise inside the enclosure shall not be more than 5 Deg C for maximum ambient above 40 Deg C and it shall be below 10 Deg C for ambient below 40 Deg C. i) There shall be provision for oil, coolant drain and fill. j) The batteries shall be accommodated in the enclosure in battery rack. k) The canopy shall be provided with high enclosure temperature safety device. l) The acoustic lining shall be made up of high-quality insulation material i.e. rockwool/glass/mineral wool/PU foam of appropriate thickness and density for sound absorption as per standard design of manufacturer's to reduce the sound level as per CPCB norms. The insulation material shall be covered with fine glass fibre cloth and would be supported by perforated MS sheet duly powder coated/GI sheet/ aluminium sheet. m) The enclosure shall be provided with suitable size & no. of hinged doors along the length of the enclosure on each side for easy access inside the acoustic enclosure for inspection, operation, and maintenance purpose. Sufficient space shall be provided inside the enclosure on all sides of the genset for inspection, easy maintenance, and repairs. n) The canopy shall be as compact as possible with good aesthetic look. n) The complete enclosure shall be of modular construction. o) The forced enclosure shall be as per manufacturer design using either engine radiator fan or additional blower fan(s). If the acoustic enclosure is to be provided with forced ventilation, then suitable size of axial flow exhaust fan to take the hot air from the enclosure complete with necessary motors and auto start arrangement shall be

		provided. The forced ventilation arrangement shall be provided with auto stop arrangement to stop after 5 minutes of the stopping of the gen set. p) The inside of the enclosure shall be provided with at least 2 (two) nos. Suitable LED Type luminaire controlled by a 5A switch for adequate lighting during servicing etc. of the gen set. The power supply to this luminaire shall be from the load side of the panel so that it can remain energized under all conditions. q) The control panel for the Generating set shall be installed separately inside the acoustic enclosure. r) A high temperature trip system (to shut down the engine by cutting off fuel supply to the engine through the solenoid valve) with variable setting connected to a thermostatically controlled blower must be provided for eliminating excessive heat dissipated by the engine within the acoustic enclosure. s) Suitable continuous online Temperature Monitoring and Control System with Alarm and Shut Down Mechanism shall be provided. t) When the concentration of gas inside the acoustic enclosure reaches 10 % of LEL of gas, audio visual alarm shall activate, and automatic preventive measure shall activate to reduce the concentration of leakage gas. These preventive measures include switching on heavy duty exhaust fan to disperse leakage gas or stoppage of gas leakage itself. u) When the concentration of gas inside the acoustic enclosure reaches 15 % of LEL of gas (or any other suitable rating), the alternator main circuit breaker shall trip automatically and subsequently the engine shall be shut down instantaneously by automatic device (i.e., cutting off power supply to the fuel solenoid valve.) v) A separate Blower of suitable size (size/capacity to be specified in the offer) shall be provided and it shall be in operation even if the thermostatically controlled blower stops / fails. There shall be a provision of emergency shutdown of the generating set (Prime Mover) from outside the enclosure.
2.0	**SERVICE ACCESSIBILITY**:	Genset /engine control panel shall be visible from outside the enclosure. a) Routine/periodical check on engine/alternator (filter replacement and tappet setting etc) shall be possible without dismantling acoustic enclosure. b) For major repairs/overhaul, it may be required to dismantle the acoustic enclosure. c) Sufficient space shall be available around the genset for inspection and service.
3.0	**ENCLOSURE ILLUMINATION**	(i) A separate circuit shall be provided for lighting of the acoustic part of the enclosure. Minimum 2 Nos. LED lamps shall be fitted in wall mounted type/ bulkhead light fittings.
4.0	**ENCLOSURE EARTHING ARRANGEMENT**:	Two nos. of 50x6 mm GI straps (earth bus) shall be provided inside the enclosure on both sides and fixed on the skid floor. The earth loops from alternator, control panel, changeover panel, auxiliary motors (if provided) shall be connected to these straps with two distinct and independent GI earth straps of sufficient size as per IS 3043. Earth leads and earthing jobs as per IS-3043. Suitable studs with fastener arrangement shall be provided on the earth buses for connection of earth straps to outside earth electrodes.
SECTION C		**SPECIAL TERMS AND CONDITIONS**
1.0	The Engine and the Alternator (in case of bought out item) must be purchased from the respective OEM or the authorized dealer of OEM of these items and such purchase documents must be submitted along with the supply of the items. Bidders must furnish undertaking to comply with the same in their technical bids.	
2.0	Undertaking from the OEM of Engine and Alternator (in original on OEM's letter head) shall be submitted by the bidder along with technical bid, guaranteeing uninterrupted supply of spares and availability of service for at least 10 years with effect from delivery of the Item / product for the item / product to be supplied under the Tender / Order, in the event of placement of order.	

ANNEXURE – II

BID EVALUATION CRITERIA (BEC)/BID REJECTION CRITERIA (BRC)

The bid must conform to the specifications and terms and conditions given in the enquiry. Bid shall be rejected in case the items offered do not conform to all the required technical parameters stipulated in the technical specifications and to the respective international / national standards wherever stipulated. Notwithstanding the general conformity of the bids to the stipulated specifications and terms and conditions, the following requirements shall have to be particularly met by the bidders, without which the offer shall be considered as non-responsive and rejected.

A. TECHNICAL

1.0 Bidder's Eligibility:

The bidder should either be an –

(i) OEM (Original Equipment Manufacturer) of the Engine/ Alternator/ Generator set.

OR

(ii) Authorized dealer of OEM of Engine/ Alternator/ Generator set

Note: *A copy of the Certificate of Incorporation (if the bidder is OEM) and a copy of valid authorized dealership certificate (if the bidder is Authorized dealer) must be submitted in the technical bid.*

2.0 Bidder's Experience:

(i) The bidder/OEM must have supplied to any Government/Semi Government bodies/Public Limited Company in India during the last 05 (five) years as on original bid closing date of the tender:

(a) Gas engine driven Generating Sets (of capacity 25 kVA or above) of value not less than **INR 16.27** Lakhs in a single order.

OR

(b) At least **01 (One) no.** Gas Engine Driven Generating Sets (of capacity 25 kVA or above) in a single order.

(ii) Documentary evidence in respect of manufacturing & supply, either from the OEM/Bidder should be submitted with the technical bid, in the form of copies of relevant signed Purchase Orders along with copies of any of the following documents in respect of satisfactory execution of the Purchase Order failing which the bid will be rejected.

(a) Signed & sealed satisfactory supply/ completion/ installation report (in original on user's letter head) (OR)
(b) Bill of Lading (OR)
(c) Consignee delivery receipt/ challan (OR)
(d) Central Excise Gate Pass/ Tax Invoice issued under relevant rules of Central Excise/Vat./GST(OR)
(e) Commercial Invoice/ Payment Invoice.

Notes to Clause No. A.2.0 above:

a. The purchase order date need not be within 05(five) years preceding original bid closing date of this tender. However, the execution of supply should be within 05(five) years preceding original bid closing date of this tender.
b. A supply order executed by a bidder for its own organisation/subsidiary cannot be considered as experience for the purpose of meeting BEC.

3.0 The engine shall be of four-stroke cycle, spark-ignited, radiator cooled, in-line naturally aspirated/ turbocharged/turbocharged after-cooled gas engine with mechanical governing/ electronic Engine Control Unit integrating governing, monitoring and diagnosing features and functions, capable of operating without any external ventilation system at the given site conditions and should be suitable for generator drive meeting the latest CPCB norms/ norms of the Environment (protection) Rules 1986 *[section: 95A for Genset run on dedicated Natural Gas (NG) or Liquid Petroleum Gas (LPG); Notification no. GSR 281(E) dated 7th March 2016 issued by Ministry of Environment, Forest & Climate Change, Government of India]* for emission and noise level.

Note to Clause no. A.3.0:
A valid copy of both the Type Approval and Conformity of Production (COP) certificates of the offered engine model and generating set should be submitted with the technical bid for compliance towards –

(i) emission norms
(ii) *noise norms*

4.0 The rated output of the engine at 1500 RPM should be suitable for driving generator set of capacity 25 kVA Prime Duty and Performance Class not less than G2/G3 as per ISO 8528-5 with natural gas fuel and compression ratio not exceeding 12:1.

The bidder must submit the manufacturer's (OEM) product catalogue of the engine/generating set where the rated output should find mention in it in the technical bid.

5.0 The offered genset engine model should have proven track record of not less than 2400 running hours in one single unit.

Documentary evidence such as supply/purchase order copy and satisfactory performance certificates from the owner/user with the Make and Model of the genset clearly appearing in the body of the above documents should be enclosed with the technical bid.

6.0 **DELIVERY PERIOD**: **Delivery of all the Genset Packages must be completed within 270 days from the date of issue of Purchase order.**

Installation & Commissioning shall be completed within 90 days from the date of receipt of site clearance from OIL.

(Please refer to SECTION A, Clause no. 19.0 of Annexure – I: TRIAL RUN AND HANDING OVER TO OIL regarding acceptance/taking over of the gensets)

Bids submitted by Bidders quoting delivery period more than the abovementioned duration shall not be accepted. Bidders must categorically confirm the delivery period in their Technical Bid.

B. FINANCIAL

1.0 The bidder shall have an annual financial turnover of minimum **INR 16,27,097.20** during any of the preceding 3 (Three) financial/accounting years reckoned from the original bid closing date of the tender.

[Annual Financial Turnover of the bidder from Operations shall mean - "Aggregate value of the realization of amount made from the sale, supply or distribution of goods or on account of services rendered, or both, by the company (bidder) during a financial year" as per the Companies Act, 2013 Section 2 (91)]

2.0 "Net Worth" of the bidder should be positive for the financial/accounting year just preceding to the original bid closing date of the tender.

[Net worth shall mean: "Share capital + Reserves created out of profits and securities Premium - Aggregate value of accumulated losses (excluding revaluation reserves) - deferred expenditure - Miscellaneous Expenditure to the extent not written off and carried forward loss - Reserves created out of write back of depreciation and amalgamation"]

3.0 Considering the time required for preparation of Financial Statements, if the last date of preceding financial / accounting year falls within the preceding six months reckoned from the original bid closing date and the Financial Statements of the preceding financial / accounting year are not available with the bidder, then the financial turnover of the previous three financial / accounting years excluding the preceding financial / accounting year will be considered. In such cases, the Net worth of the previous financial / accounting year excluding the preceding financial / accounting year will be considered. However, the bidder has to submit an affidavit/undertaking certifying **(PROFORMA – A)** that 'the balance sheet/Financial Statements for the financial year (As the case may be) has actually not been audited so far'.

Note:

a) For proof of Annual Turnover & Net worth any one of the following document must be submitted along with the bid:-

i) A certificate issued by a practicing Chartered/Cost Accountant (with Membership Number and Firm Registration Number), certifying the Annual turnover & Net worth as per format prescribed in **PROFORMA - B**.

OR

ii) Audited Balance Sheet along with Profit & Loss account.

b) In case the bidder is a Central Govt. Organization/PSU/State Govt. Organization/Semi-State Govt. Organization or any other Central/State Govt. Undertaking, where the auditor is appointed only after the approval of Comptroller and Auditor General of India and the Central Government, their certificates may be accepted even though FRN is not available. However, bidder to provide documentary evidence for the same.

4.0 In case the Audited Balance Sheet and Profit & Loss Account submitted along with the bid are in currencies other than INR or US$, the bidder shall have to convert the figures in equivalent INR or US$ considering the prevailing conversion rate on the date of Balance Sheet and Profit & Loss Account. A CA certificate is to be submitted by the bidder regarding converted figures in equivalent INR or US$.

5.0 In case the Bidder is subsidiary company (should be 100% owned subsidiary of the parent/ultimate parent/holding company) who does not meet financial criteria by itself and submits its bid based on the strength of parent/ultimate parent/holding company, then following documents need to be submitted:

(i) Turnover of the parent/ultimate parent/holding company should be in line with Para B (1.0) above.
(ii) Net Worth of the parent/ultimate parent/holding company should be positive in line with Para B (2.0) above
(iii) Corporate Guarantee **(PROFORMA - C)** on parent/ultimate parent/holding company's company letter head signed by an authorized official undertaking that they would financially support their wholly owned subsidiary company for executing the project/job in case the same is awarded to them.
(iv) Documents to substantiate that the bidder is as 100% subsidiary of the parent/ultimate parent/holding company.

ANNEXURE-III

DATA SHEET

EQUIPMENT DATA SHEET		
1	Make & Model of offered Generating Set	
2	Typical Maximum Prime Power Rating at 50Hz (0.8 P.F.), kW:	
3	Output Voltage and Frequency:	
4	Power Factor:	
5	No. of Phases:	
6	Over all Dimensions, MM:	
7	Dry Weight:	
8	Performance in 40^0C air, 150 MSL, Prime power rating at 0.8 power factor (KW)/ kVA rating:	
9	Fuel consumption at standard conditions for: 50%, 75% and 100% load	
10	Exhaust gas components: % NOX, % SO, Tons particulate/yr/mo at 50%, 100% load	
11	Verification of 10% overload capability	
ENGINE		
1	Make:	
2	Type/Model:	
3	No. of cylinders:	
4	Aspiration:	
5	Bore:	
6	Stroke:	
7	Displacement, Litre:	
8	Engine Output Prime, kWm (Max):	
9	Piston Speed, m/s:	
10	Brake Mean Effective Pressure (BMEP), kPa:	
11	Engine Rating (BHP) at 1500RPM and Piston Compression Ratio:	
12	Natural Gas Consumption for Gas Calorific Value: (970BTU/CFT or 8632kCal/M3) SCM/Hr.	
13	Exhaust Temperature (Stack)^{0}C	
14	Energy Input, kW:	
15	Energy Output, kW:	
16	Heat Rejected to Jacket Water, kW:	
17	Heat Rejected to After-cooler LTA Circuit, kW:	
18	Heat Rejected to Exhaust, kW:	
19	Heat Rejected to Ambient+ Unaccounted, kW:	
20	Air Flow in Litre/sec:	
21	Exhaust Gas Flow, Litre/sec:	
22	Exhaust System Permissible Back Pressure, mm Hg:	
23	Engine Water Flow, Litre/Min:	
24	After Cooler Circulating Water Flow, Litre/Min:	
25	Main Line Pipe size, MM:	
26	Main Line Gas Pressure, Kg/CM2	
27	Engine Dimension, L x B x H:	
28	Dry Weight of the Engine without Cooling System:	
29	Governing system	
30	Type of governor	
31	Accuracy	
32	Engine protection details	
33	Method of starting	

RADIATOR		
1	Model/Type	
2	Coolant Capacity	
3	Horsepower required to run the radiator fan	
ALTERNATOR		
1	Make's name	
2	Rated KVA	
3	Power factor	
4	Rated voltage	
5	Rated current	
6	Speed in rpm	
7	Frequency	
8	No. Of phase	
9	Overload capacity	
10	Class Of insulation	
11	Type of enclosure	
12	Voltage regulation	
13	Direction of rotation	
14	Type of bearing	
15	RTD's provided (no)	
16	Model	
17	Frame	
18	Insulation class	
19	Number of Leads	
20	Weight, total	
21	Weight, rotor	
22	Air Flow	
23	At rated voltage:	
24	Efficiency at 0.8 power factor for: 50% load, 75% load, 100% load	
25	Fault current, 3 phase symmetrical	
26	Decrement curve	

ANNEXURE-IV

TECHNICAL CHECKLIST

*The Technical Check List must be completed and returned with your offer. Please ensure that all these points are covered in your offer. These will ensure that your offer is properly evaluated. Please select **Yes/No/Not Applicable** to the following questions, in the right-hand column*

SL. NO.	DESCRIPTIONS	COMPLIANCE Yes/No/Not Applicable	REMARKS
1	Whether quoted as OEM of Engine and whether documentary evidence submitted?		
2	Whether quoted as OEM of Alternator & whether documentary evidence submitted?		
3	Whether quoted as OEM of Genset & whether documentary evidence submitted?		
4	Whether quoted as Authorized Dealer of OEM (Engine/Alternator/ Genset) and whether documentary evidence submitted?		
5	Whether After-sale Service Centre for the engine offered located in India?		
6	Whether clauses of the technical bid is responded clause-wise		
7	Whether deviation (if any) from the technical specifications are highlighted clause wise?		
8	Whether detail specification of engine with manufacturer's technical literature/catalogue enclosed?		
9	Whether detail specification of Alternator with manufacturer's technical literature/catalogue enclosed?		
10	Whether test certificate of Alternator and Control Panel shall be submitted?		
11	Whether power and Wiring diagram of Alternator Control Panel submitted?		
12	Whether bill of Materials of Control Panel submitted?		
13	Whether confirmed that control panel drawing shall be approved by OIL before manufacturing in the event of placement of order?		
14	Whether offered engine is as per NIT specifications?		
15	Whether quoted for supply, installation, commissioning & Test run at site of generator set?		
16	Whether the Generator Set is rated in the 25 kVA at 0.8PF, 415Volts AC 3 Phase 50Hertz Prime Duty?		
17	Whether the engine and the Gen set design is as per ISO 3046/BS5514/ISO8528 standards?		
18	Whether documentary evidence i.e. (i) Purchase Order Copies, (ii) Invoices, (iii) Satisfactory supply/ completion/Installation report for the supplies made against the past orders for the specified engine driven generator sets submitted with the technical bid?		
19	Whether undertaking and confirmation from OEM that the equipment to be supplied are not going to become obsolete for the next 10 years and whether spare parts for 10 years shall continue to be supplied at the least?		
20	Whether undertaking/ certificate from the engine OEM/Generator Set OEM certifying the block load capability of the engine/generator submitted with the technical bid?		
21	Whether undertaking/ certificate from the engine OEM certifying the rated output vis-a-vis compression ratio and RPM of the engine submitted with the technical bid?		
22	Whether undertaking/ certificate from the engine manufacturer in support of the engine rating and output is submitted?		
23	Whether Composite Operation Manual for the Generator Set Complete and Trouble Shooting Chart shall be supplied along with the Order?		

24	Whether Engine Shop Manual (Engine Rebuilding Manual) and Parts Manual shall be supplied with the Order?		
25	Whether spare parts of engine, gas train etc for two years operation and maintenance shall be supplied along with the order and list of such spares submitted with the technical bid?		
26	Whether the content of this Check List is read and responded?		
27	Whether Spares Price List/ Price Break up submitted manually in sealed envelope as per Clause no. 14.0 of Annexure – I?		
28	Whether total cost of spares as per clause no. 14.1 and 14.3 of Annexure - I has been included in the cost of each engine package-wise?		

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ANNEXURE – V

GENERAL NOTES TO BIDDERS

1.0 Bidders shall submit their offer mentioning pointwise compliance/noncompliance to all the terms & conditions, BEC/BRC, Specifications etc. Any deviation(s) from the tender terms & conditions, BEC/BRC, Specifications etc. should be clearly highlighted specifying justification in support of deviation.

2.0 To ascertain the substantial responsiveness of the bid, OIL reserves the right to ask the bidder for clarification in respect of clauses covered under BRC also and such clarifications fulfilling the BRC clauses in toto must be received on or before the deadline given by OIL, failing which the offer will be summarily rejected. However, bidder(s) must note that there should not be any additional financial involvement arising out of such post tender clarifications.

3.0 The Bidder to submit following Technical Evaluation Sheet along with technical bid -

Annexure – VI: Bid Evaluation Matrix (Technical Specification)
Annexure – VII: Bid Evaluation Matrix (BEC/BRC)

4.0 TAX COLLECTIBLE AT SOURCE (TCS):

Tax Collectible at Source (TCS) applicable under the Income-tax Law and charged by the SUPPLIER shall also be payable by OIL along with consideration for procurement of goods/materials/ equipment. If TCS is collected by the SUPPLIER, a TCS certificate in prescribed Form shall be issued by the SUPPLIER to OIL within the statutory time limit.

Payment towards applicable TCS u/s 206C (IH) of Income Tax Act, 1961 will be made to the supplier provided they are claiming it in their invoice and on submission of following undertaking along with the invoice stating that:

a. TCS is applicable on supply of goods invoiced to OIL as turnover of the supplier in previous year was more than Rs. 10 Cr. and
b. Total supply of goods to OIL in FY …….. (As applicable) exceeds Rs. 50 Lakh and
c. TCS as charged in the invoice has already been deposited (duly indicating the details such as challan No. and date) or would be deposited with Exchequer on or before the due date and
d. TCS certificate as provided in the Income Tax Act will be issued to OIL in time.

However, Performance Security deposit will be released only after the TCS certificate for the amount of tax collected is provided to OIL. Supplier will extend the performance bank guarantee (PBG), wherever required, till the receipt of TCS certificate or else the same will be forfeited to the extent of amount of TCS, if all other conditions of Purchase order are fulfilled.

The above payment condition is applicable only for release of TCS amount charged by supplier u/s 206C (I H) of Income tax Act, 1961.

5.0 At any time prior to the deadline for submission of bids, the Company may, for any reason, whether at its own initiative or in response to a clarification requested by a prospective Bidder, modify the tender Documents through issuance of Corrigendum(s)/Addendum(s). Bidders are expected to take the Corrigendum(s)/ Addendum(s) into account in preparation and submission of their bid. No separate intimation for Corrigendum(s)/Addendum(s) published by OIL shall be sent to the Bidders.

6.0 APPLICABILITY OF BANNING POLICY OF OIL INDIA LIMITED:

Banning Policy dated 6th January, 2017as uploaded in OIL's website will be applicable against the tender (and order in case of award) to deal with any agency (bidder/contractor/supplier/ vendor/service provider) who commits deception, default, fraud or indulged in other misconduct of whatsoever nature in the tendering process and/or order execution processes. Applicability of the policy shall include but not limited to the following in addition to other actions like invoking bid security/performance security/cancellation of order etc. as deemed fit and as mentioned elsewhere in the tender:

a) Backing out by bidder within bid validity.
b) Backing out by successful bidder after issue of LOA/Order/Contract
c) Non/poor performance and order/contract execution default.

The bidders who are on Holiday/Banning/Suspension list of OIL on due date of submission of bid/ during the process of evaluation of the bids, the offers of such bidders shall not be considered for bid opening/ evaluation/award. If the bidding documents were issued inadvertently/downloaded from website, the offers submitted by such bidders shall also not be considered for bid opening/evaluation/ Award of Work.

7.0 RESTRICTIONS ON PROCUREMENT FROM A BIDDER OF A COUNTRY SHARING LAND BORDER WITH INDIA:

Ministry of Finance of Govt. of India, Department of Expenditure, Public procurement Division vide office memorandum F. No. 6/18/2019-PPD dated 23rd July, 2020(order-Public Procurement no.1) has proclaimed the insertion of Rule 144 (xi) in the General Financial Rules (GFRs), 2017 w.e.f. 23rd July, 2020 regarding restrictions on procurement from a bidder of a country which shares a land border with India on the grounds of defence of India on matters directly or indirectly related thereto including national security. For clauses on applicability of above restriction please refer the above-mentioned Notification. Bidders are requested to take note of the clauses and submit their offers accordingly, wherever applicable. In this regard, bidders must submit duly sealed & signed undertaking as per format provided vide, **PROFORMA – D** along with the technical bid.

"Any bidder from a country which shares a land border with India will be eligible to bid in any procurement whether of goods, services or works, only if the bidder is registered with the competent authority"

8.0 CONCESSIONAL GST:

The items covered in this Tender shall be used by Oil India Limited in the PEL/ML areas and hence concessional **GST @12%** will be applicable as per Govt. Policy in vogue.

Note: *Successful bidder shall arrange to provide all necessary documents (invoice etc.) to OIL for applying Essentiality Certificate on receipt of request from OIL or at least **45 days** prior to their readiness for despatch, whichever is earlier. Further, successful bidder shall affect dispatch only on receipt of relevant certificates/shipment clearance from OIL, failing which all related liabilities shall be to supplier's account.*

9.0 MICRO AND SMALL ENTERPRISES (MSE):

Categorisation and various Criteria applicable to MSE bidders shall be guided by the Gazette Notification No. CG-DL-E-26062020-220191 dated 26.06.2020 and Amendment vide Gazette Notification no. CG-DL-E-16062021-227649 dated 16th June, 2021 issued by Ministry of MICRO, SMALL AND MEDIUM ENTERPRISES. The existing enterprises registered under EM- Part-II or UAM till 30th June, 2020 shall continue to be valid only for a period up to the 31st day of December, 2021.

The bidder claiming as MSE status (MSE-General, MSE-SCIST, MSE -Woman) against this tender has to submit the following documents for availing the benefits applicable to MSEs:

Udyam Registration Number with Udyam Registration Certificate.

Note: *In case bidding MSE is owned by Schedule Caste or Schedule Tribe entrepreneur or Woman Entrepreneur, valid documentary evidence issued by the agency who has registered the bidder as MSE owned by SC/ST entrepreneur/ Woman Entrepreneurs should also be enclosed.*

9.1 For availing benefits under Public Procurement Policy (Purchase preference), the interested MSE Bidders must ensure that they are the manufacturer/service provider of tendered item(s) and registered with the appropriate authority for the said item(s).

10.0 FINANCING OF TRADE RECEIVABLES OF MICRO AND SMALL ENTERPRISES (MSES) THROUGH TRADE RECEIVABLES DISCOUNTING SYSTEM (TREDS) PLATFORM.

Based on the initiatives of Government of India to help MSE vendors get immediate access to liquid fund based on Buyers credit rating by discounting, OIL has registered itself on TReDS platform with M/s RXIL and M/s A TREDS Ltd. (Invoice Mart). MSE vendors can avail this benefit by registering themselves with any of the exchanges providing e-discounting/electronic factoring services on TReDS platform and following the procedures defined therein, provided OIL is also participating in such TReDS Platform as a Buyer.

i) MSE Vendor should be aware that all costs relating to availing the facility of discounting on TReDS platform including but not limited to Registration charges, Transaction charges for financing, Discounting Charges, Interest on financing, or any other charges known by any name shall be borne by MSE Vendor.

ii) MSE Vendor hereby agrees to indemnify, hold harmless and keep OIL and its affiliates, Directors, officers, representatives, agents and employees indemnified, from any and all damages, losses, claims and liabilities

(including legal costs) which may arise from Sellers submission, posting or display, participation, in any manner, on the TReDS Platform or from the use of Services or from the Buyer's breach of any of the terms and conditions of the Usage Terms or of this Agreement and any Applicable Law on a full indemnity basis.

iii) OIL shall not be liable for any special, indirect, punitive, incidental, or consequential damages or any damages whatsoever (including but not limited to damages for loss of profits or savings, business interruption, loss of information), whether in contract, tort, equity or otherwise or any other damages resulting from using TReDS platform for discounting their (MSE Vendor's) invoices.

Note:
(i) Buyer means OIL who has placed Purchase Order/ Contract on a MSE Vendor (Seller).
(ii) Seller means a MSE vendor, who has been awarded Purchase Order/ Contract by OIL (Buyer).

11.0 PERFORMANCE SECURITY:

Successful bidder will be required to furnish a Performance Bank Guarantee @3% of the order value with validity as mentioned in the tender document. The Performance Security must be submitted exactly as per **PROFORMA – E**. Bidder must confirm the same in their Technical Bid.

The Bank Guarantee issued by the bank must be routed through SFMS platform as per the following details:

(i) MT 760/MT 760 COV for issuance of bank guarantee.
(ii) MT 760/MT 767 COV for amendment of bank guarantee.

[Tender Number should reflect in the SFMS text under MT 760/MT 760 COV]

The above message/intimation shall be sent through SFMS by the BG issuing Bank branch to ICICI Bank, Duliajan Branch, IFSC Code- ICIC0000213, Branch Address.: ICICI Bank Ltd, Kunja Bhavan, Daily Bazaar, Duliajan, Dibrugarh, Assam - 786602. The Bank details are as under:

Bank Details of Beneficiary	
Bank Name	ICICI BANK LTD.
Branch Name	DULIAJAN
Branch Address	KUNJA BHAVAN, DAILY BAZAAR, DULIAJAN, DIBRUGARH, ASSAM - 786602
IFSC Code	ICIC0000213
Unique identifier code (Field 7037)	OIL503988890
Company name	Oil India Limited

PROFORMA – A

FORMAT FOR CERTIFICATE OF COMPLIANCE OF FINANCIAL CRITERIA

(*ON THE OFFICIAL PAD OF THE BIDDER TO BE EXECUTED BY THE AUTHORIZED SIGNATORY OF THE BIDDER*)

Ref: Clause No. B (3.0) - Financial Criteria of the BEC

Tender No.: _____

I ……. the authorized signatory(s) of.....(Company or firm name of address) do hereby affirm and declare as under:-

The balance sheet/Financial Statements for the financial year _____ (as the case may be) has actually not been audited as on the Original Bid closing Date.

Place :…….
Date :……. **Signature of the authorized signatory**

Note: ***This certificate are to be issued only considering the time required for preparation of Financial Statements i.e. if the last date of preceding financial / accounting year falls within the preceding six months reckoned from the original bid closing date.***

PROFORMA – B

CERTIFICATE OF ANNUAL TURNOVER & NETWORTH

TO BE ISSUED BY PRACTISING CHARTERED ACCOUNTANTS' FIRM ON THEIR LETTER HEAD

TO WHOM IT MAY CONCERN

This is to certify that the following financial positions extracted from audited financial statements of M/s…… (Name of the bidder) for the last 3 (three) completed accounting years upto……(as the case may be) are correct.

YEAR	TURNOVER In INR (Rs.) Crores/ USD Million*	NET WORTH In INR (Rs.) Crores / USD Million*

*Rate of conversion (if used any): USD 1.00 = INR …….

Place:
Date:

Seal:

Membership No.:
Registration Code:

Signature:

Applicable for Global Tenders.

NOTE: ***As per the guidelines of ICAI, every practicing CA is required to mention Unique Document Identification Number (UDIN) against each certification work done by them. Documents certified by CA without UDIN shall not be acceptable.***

PROFORMA – C

PARENT/ ULTIMATE PARENT/ HOLDING COMPANY'S CORPORATE GUARANTEE TOWARDS FINANCIAL STANDING

(Delete whichever not applicable)

(TO BE EXECUTED ON COMPANY'S LETTER HEAD)

DEED OF GUARANTEE

THIS DEED OF GUARANTEE executed at ..... this ..... day of ..... by M/s .....(mention complete name) a company duly organized and existing under the laws of ..... (insert jurisdiction/country), having its Registered Office at.....herein after called "the Guarantor" which expression shall, unless excluded by or repugnant to the subject or context thereof, be deemed to include its successors and permitted assigns.

WHEREAS M/s. Oil India Limited (hereinafter referred to as OIL) has invited offers vide their Tender No…… for……and M/s……..(Bidder) intends to bid against the said tender and desires to have Financial support of M/s…… [Parent / Ultimate Parent/Holding Company(Delete whichever not applicable)] and whereas Parent/Ultimate Parent/Holding Company(Delete whichever not applicable) represents that they have gone through and understood the requirements of subject tender and are capable and committed to provide the Financial support as required by the bidder for qualifying and successful execution of the contract, if awarded to the bidder.

Now, it is hereby agreed by the Guarantor to give this Guarantee and undertakes as follows:

1. The Guarantor confirms that the Bidder is a 100% subsidiary of the Guarantor.
2. The Guarantor agrees and confirms to provide the Audited Annual Reports of any of the preceding 03(three) financial/accounting years reckoned from the original bid closing date.
3. The Guarantor have an annual financial turnover of minimum INR…….. Cr or USD …….. during any of the preceding 03(three) financial/ accounting years reckoned from the original bid closing date.
4. Net worth of the Guarantor is positive for preceding financial/ accounting year.
5. The Guarantor undertakes to provide financial support to the Bidder for executing the project/job, in case the same is awarded to the Bidder.
6. The Guarantor represents that:
   (a) this Guarantee herein contained shall remain valid and enforceable till the satisfactory execution and completion of the work (including discharge of the warranty obligations) awarded to the Bidder.
   (b) the liability of the Guarantor, under the Guarantee, is limited to the 100% of the order value between the Bidder and OIL. This will, however, be in addition to the forfeiture of the Performance Guarantee furnished by the Bidder.
   (c) this Guarantee has been issued after due observance of the appropriate laws in force in India.
   (d) this Guarantee shall be governed and construed in accordance with the laws in force in India and subject to the exclusive jurisdiction of the courts of New Delhi, India.
   (e) this Guarantee has been given without any undue influence or coercion, and that the Guarantor has fully understood the implications of the same.
   (f) the Guarantor has the legal capacity, power and authority to issue this Guarantee and that giving of this Guarantee and the performance and observations of the obligations hereunder do not contravene any existing laws.

for and on behalf of (Parent/Ultimate Parent/ Holding Company) (Delete whichever not applicable) Witness: 1. 2.	for and on behalf of (Bidder) Witness: 1. 2.

PROFORMA – D

Format for Undertaking by Bidders towards compliance of office memorandum F. No. 6/18/2019-PPD dated 23rd July, 2020 (Public Procurement no. 1) issued by Department of Expenditure, Ministry of Finance, Govt. of India

(To be typed on the letter head of the bidder)

Ref. No_____ **Date:_____**

Tender No. _____Date:_____

OIL INDIA LIMITED
MATERIALS DEPARTMENT,
DULIAJAN, ASSAM, INDIA

Dear Sirs,

We have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India; We certify that this bidder is not from such a country or, if from such a country, has been registered with the Competent Authority. We hereby certify that this bidder fulfils all requirements in this regard and is eligible to be considered. [Where evidence of valid registration by the Competent Authority shall be attached.]"

We also agree that, during any stage of the tender/contract agreement, in case the above information/documents submitted by us are found to be false, Oil India Limited has the right to immediately reject our bid/terminate contract at any stage and carry out further legal action on us in accordance with law.

Yours faithfully,
For (type name of the firm here)

Signature of Authorised Signatory
Name :
Designation :
Phone No.
Place :
Date :
(Affix Seal of the Organization here, if applicable)
Note : This form should be returned along with offer duly signed.

PROFROMA – E

FORMAT FOR PERFORMANCE BANK GUARANTEE

To,
GENERAL MANAGER – MATERIALS (HOD)
OIL INDIA LIMITED, MATERIALS DEPARTMENT,
DULIAJAN, ASSAM, INDIA, PIN – 786602

WHEREAS……(Name and address of Contractor) (hereinafter called "Contractor") had undertaken, in pursuance of Contact No…… to execute (Name of Contract and Brief Description of the Work) …… (hereinafter called "the Contract").

AND WHEREAS it has been stipulated by you in the said Contract that the Contractor shall furnish you with a Bank Guarantee as security for compliance with Contractor's obligations in accordance with the Contract.

AND WHEREAS we (May incorporate the Bank Name) have agreed to give the Contractor such a Bank Guarantee; NOW THEREFORE we hereby affirm that we are Guarantors on behalf of the Contractor, up to a total of (Amount of Guarantee in figures)…… (in words …… ……), such amount being payable in the types and proportions of currencies in which the Contract price is payable, and we undertake to pay you, upon your first written demand and without cavil or arguments, any sum or sums within the limits of guarantee sum as aforesaid without your needing to prove or to show grounds or reasons for your demand for the sum specified therein. We hereby waive the necessity of your demanding the said debt from the Contractor before presenting us with the demand.

We further agree that no change or addition to or other modification of the terms of the Contract or the work to be performed thereunder or of any of the Contract documents which may be made between you and the Contractor shall in any way cease us from any liability under this guarantee, and we hereby waive notice of such change, addition or modification.

This guarantee is valid until the ……day of……..

The details of the Issuing Bank and Controlling Bank are as under:

A. Issuing Bank:
   BANK FAX NO:
   BANK EMAIL ID:
   BANK TELEPHNE NO:
   IFSC CODE OF THE BANK:

B. Controlling Office:
   Address of the Controlling Office of the BG issuing Bank:
   Name of the Contract Person at the Controlling Office with Mobile No. and e-mail address:

   Notwithstanding anything contained herein:

   (a) Our liability under this Bank Guarantee shall is restricted up to Rs……..
   (b) This guarantee shall be valid till ……
   (c) We are liable to pay the guarantee amount or any part thereof under this Bank Guarantee only and only if you serve upon us a written claim or demand on or before ……(Date of Expiry of BG PLUS one year claim period).
   (d) At the end of the claim period that is on or after……..(Date of expiry of……the Bank Guarantee Plus Minimum of 1 year claim period shall be stipulated) all your rights under this Guarantee shall stand extinguished and we shall be discharged from all our liabilities under this Guarantee irrespective of receipt of original Bank Guarantee duly discharged, by Bank.

Name of the Contact Person at the Controlling Office with Mobile No. and e-mail address:

SIGNATURE AND SEAL OF THE GUARANTORS……
Designation:……
Name of the Bank:……
Address:……

UNDERTAKING BY VENDOR ON SUBMISSION OF BANK GUARANTEE

To,

Oil India Limited,
Materials Department,
Duliajan, Assam - 786602

We, M/s…….. are submitting the Bid Security/Performance Security (strike out whichever not applicable) in favour of Oil India Limited, Duliajan in the form of bank guarantee bearing Reference No……..for an amount of INR……valid up to …… as per terms and conditions of Tender / Contract No.....

BG issuing bank details:

Bank: Branch: IFS Code:	
Contact Details E-mail Addresses:	Mobile No.: Telephone No.: Fax No.:
Correspondence Address H No/Street/City:	State: Country: Pin Code:

Declaration:

We have arranged to send the confirmation of issuance of the bank guarantee via SFMS portal through our bank using the details mentioned in the tender and hereby confirming the correctness of the details mentioned.

Authorized Signature: _____
Name: _____
Vendor Code: _____
Email ID: _____
Mobile No.: _____

Enclosure: Original bank guarantee

ANNEXURE – VI

BID EVALUATION MATRIX (TECHNCIAL SPECIFICATION)

BID EVALUATION MATRIX (TECHNCIAL SPECIFICATION) *(TO BE FILLED IN BY BIDDER DULY SIGNED)*					
SL. NO.	**SECTION/ SUB-SECTION**	**DESCRIPTION**		**BIDDER'S RESPONSE (Complied / Not Complied /Deviation/Not Applicable)**	**TO BE FILLED BY THE BIDDER** **Relevant Location in their Bid to support the remarks / compliance** **(Reference of Document name / Serial number / Page number of bid for documentary evidence)**
1.0	**SCOPE OF SUPPLY**	1.1	The scope of work includes Supply, Installation and Commissioning of Natural Gas Engine Driven Generator sets (GEGs) at OIL's Site with field testing and reliability run.		
		1.2	The GEG sets of rating and output specified herein shall be all new and shall be housed inside weather-proof acoustic enclosure. Also, it shall be complete with all accessories including electrical control panel (inside the acoustic enclosure), safety devices and shall be mounted on oil-field skid for safe lifting and transportation.		
		1.3	Rating and output of Generator Set: 25 kVA (20 kWe), 415 Volts 3 phase, 0.8 pf (lag), 50 Hertz, prime duty as per IS/ISO 8528 (Part 1 to 12, Latest Version) Standard with 10% overload capacity.		
2.0	**GENERAL REQUIREMENTS**	2.1	The generator set shall be sturdy, rugged, proven and extremely reliable and durable. The generator set shall be suitable for operation in oil and gas field installations with field gas from the oil and gas field, in solo island mode operation and outdoor deployment.		
		2.2	Electrical loads shall be utilities, induction motors and UPS.		
		2.3	The generator set shall be suitable for frequent moves from site to site.		
		2.4	The components of the complete generator set shall be of such design to satisfactorily function under all conditions of operation.		
		2.5	The entire work of manufacture/fabrication, assembly and installation shall conform to sound engineering practice. The entire installation shall be such as to cause minimum transmission of noise and vibration to the site.		
		2.6	All equipment and materials to be used in work shall be manufactured in factories of good repute having excellent track record of quality manufacturing, performance		

BID EVALUATION MATRIX (TECHNCIAL SPECIFICATION) *(TO BE FILLED IN BY BIDDER DULY SIGNED)*				
SL. NO.	**SECTION/ SUB-SECTION**	**DESCRIPTION**	**BIDDER'S RESPONSE (Complied / Not Complied /Deviation/Not Applicable)**	**TO BE FILLED BY THE BIDDER** **Relevant Location in their Bid to support the remarks / compliance** **(Reference of Document name / Serial number / Page number of bid for documentary evidence)**
		and proper after-sales service. 2.7 Bidder shall provide all related components and auxiliaries of generating set as part of the package 2.8 Bidder shall furnish all relevant data of complete package as per **ANNEXURE-III (Data Sheet)**		
3.0	**CODES & STANDARDS**	3.1 All equipment in the offer shall conform, but not limited, to the following latest edition of relevant codes & standards. 3.2 ISO 3046/1/ BS5514 or equivalent Indian/ International Standard: Specification for reciprocating internal combustion engines 3.3 IS/ISO 8528 (Part 1 to 12): Reciprocating Internal Combustion Engine Driven Alternating Current Generating Sets 3.4 IS: 10000(Part-iv) (or) (ISO: 3046) (Latest edition): Declaration of power, efficiency, fuel (NG) and lube oil consumption for gas engine. 3.5 IS: 10002: Specification for performance requirement for constant Speed Engines (above 20 kW). 3.6 IS: 12065 Noise limit 3.7 IS: 13364 Specification of Alternator coupled with IC Engines 3.8 IS: 12075 Vibration 3.9 IS: 4691 Enclosure Protection 3.10 IS: 6362 Cooling 3.11 IS: 2253 Mounting 3.12 In case of bidder's inability to use the mentioned codes and standards, the bidder/manufacturer shall indicate his proposed codes and standards defining in detail for using the same. OIL may review the bidder's proposed codes and standards for approval of the same.		
4.0	**SITE CONDITIONS**	The ambient condition of the generator sets shall be: 4.1 Maximum Ambient Temperature : 45°C 4.2 Minimum Ambient Temperature : 05°C		

BID EVALUATION MATRIX (TECHNCIAL SPECIFICATION) *(TO BE FILLED IN BY BIDDER DULY SIGNED)*				
SL. NO.	**SECTION/ SUB-SECTION**	**DESCRIPTION**	**BIDDER'S RESPONSE (Complied / Not Complied /Deviation/Not Applicable)**	**TO BE FILLED BY THE BIDDER** **Relevant Location in their Bid to support the remarks / compliance** **(Reference of Document name / Serial number / Page number of bid for documentary evidence)**
		4.3 Maximum Humidity at 21°C : 100 % 4.4 Maximum Humidity at 35°C : 95 % 4.5 Maximum Humidity at 41°C : 70 % 4.6 Maximum Altitude above sea level : 150 Meter		
5.0	**COMPOSITION OF FUEL GAS AT SITES & GAS PURIFICATION**	5.1 The composition of Onsite field gas or wellhead gas sourced from nearby oil field is furnished below. Presence of natural gas liquids in the raw gas along with crude and other troublesome impurities is very common. 5.2 The composition of the gas is broadly as under: CONSTITUTION — Range by % VOLUME a) Methane — 85.7 - 93.52 b) Ethane — 2.45 - 6.55 c) Propane — 1.28 - 3.12 d) Nitrogen — 0.53 - 1.21 e) Carbon-dioxide — 0.01 - 0.57 f) Iso-Butane — 0.31 - 0.75 g) N-Butane — 0.4 - 1.14 h) Iso-Pentane — 0.19 - 0.47 i) N-Pentane — 0.17 - 0.38 j) Hexane — 0.34 - 1.16 k) Gravity — 0.6204 -0.6919 l) Gross Calorific Value — 9636.8- 10590.8 Kcal/SCUM m) Net Calorific Value — 8704.3- 9595.4 Kcal/SCUM n) Moisture content — 21.0-120.0LB/MMCFT (336.0-1992.0 KG/MMSCM) **NOTE**: *Though the given methane content is in the range of 85.7 - 93.52% by volume, the bidders shall consider while selecting engine and its configuration, methane content of field gas to*		

BID EVALUATION MATRIX (TECHNCIAL SPECIFICATION) *(TO BE FILLED IN BY BIDDER DULY SIGNED)*				
SL. NO.	**SECTION/ SUB-SECTION**	**DESCRIPTION**	**BIDDER'S RESPONSE (Complied / Not Complied /Deviation/Not Applicable)**	**TO BE FILLED BY THE BIDDER** **Relevant Location in their Bid to support the remarks / compliance** **(Reference of Document name / Serial number / Page number of bid for documentary evidence)**
		be as low as 80% by volume and highly aggressive. The engine shall work trouble free without knocking or pre-ignition and without having to de-rate on ground of gas quality. The field gas shall be fed through scrubber and at 20-30 PSIG at upstream of gas train. 6.3 A gas scrubber adequate for full load operation of the generator set shall be included in the scope of supply in the fuel system of genset.		
6.0	**GAS ENGINE AND GENERATOR SET RATING/ CAPACITY:**	6.1 The generator set shall be rated for a prime power duty of capacity 25 KVA (20 kWe) at 0.8-PF (lag) with an output of 34.8 amperes (minimum) while generating 415 Volt AC, 3-phase, 50 Hz power (at 1500 RPM), and the rated output shall be available at the generator output terminals with the given gas composition as engine fuel. 6.2 The generating set shall meet the latest CPCB norms as per Government of India notifications for Genset run on dedicated Natural Gas (NG). 6.3 Generator set shall be ready-to-use type and suitable to operate on the given gas composition. It shall be configured to accept aggressive raw natural gas/field gas or well head gas. 6.4 The engine should have user friendly engine control display with metering, monitoring, diagnosing and protecting features all integrated with the controller of the engine. 6.5 Engine and alternator shall bear Name Plate revealing in it details of ratings published by the OEM of the engine and alternator. **<u>The following clause nos. 6.6 to 6.10 shall be certified by the engine manufacturer:</u>** (Certificate/ declaration from the Engine Manufacturer to be submitted by the bidder) 6.6 Engine rating/ output (w.r.t. compression ratio and rpm) and block load capability, pertaining to the engine with the offer 6.7 The gas engine shall have in-cylinder design to meet the latest CPCB emission norms.		

BID EVALUATION MATRIX (TECHNCIAL SPECIFICATION) *(TO BE FILLED IN BY BIDDER DULY SIGNED)*				
SL. NO.	**SECTION/ SUB-SECTION**	**DESCRIPTION**	**BIDDER'S RESPONSE (Complied / Not Complied /Deviation/Not Applicable)**	**TO BE FILLED BY THE BIDDER** **Relevant Location in their Bid to support the remarks / compliance** **(Reference of Document name / Serial number / Page number of bid for documentary evidence)**
		6.8 The engine shall be standard design of the original manufacturer designed primarily for generator set application in accordance with ISO 3046/BS5514/ IS/ISO8528 standards and with high tolerance for variable quality of gaseous fuels (field gas). 6.9 The engine shall be a four-stroke, spark-ignited, radiator cooled, naturally aspirated/turbocharged in-line engine with mechanical governing/Electronic Engine Control Unit (ECU) controller capable of meeting the rated output and duty of the generator set with 1500 RPM as speed, compression ratio not exceeding 12:1 and power of the engine shall be suitable to meet the rated output of the genset. It shall also be capable to operate without any external ventilation system and shall be configured to accept aggressive raw natural gas/field gas or well head gas. 6.10 Engine BHP with natural gas calorific value 970BTU/CFT as engine fuel and at 1500 RPM and Compression Ratio not exceeding 12:1.		
7.0	**ALTERNATOR AND CONTROL PANEL AND OTHER ELECTRICAL ITEMS:**	(Refer **SECTION A** for Specification of Electrical Items) **Note:** (i) The specification for electrical items in SECTION A shall have over-riding value and shall be followed for that particular item/work, wherever they differ from specifications given in other annexure. (ii) Engine & Alternator shall be supplied with independent lifting hooks/eye bolts for safe Handling		
8.0	**GAS ENGINE FEATURES, COMPONENTS, AND ACCESSORIES:**	The specifications given hereunder are general in nature and shall be subject to the standard practice of the engine manufacturer. However, the ignition and governor with the engine shall be as per the given specification provided under in the respective subsection here under. Bidder/manufacturer shall be responsible for providing gas engine driven generating set as per standard practice with the specified technical requirements suitable for Prime Rated Power (PRP) Operation. 8.1 STARTING SYSTEM - Electrical start complete with batteries. The engine starting system shall include 12 volts/24 volts DC starting motor(s), starter relay, and automatic reset circuit breaker to protect against butt engagement. Batteries shall		

BID EVALUATION MATRIX (TECHNCIAL SPECIFICATION) *(TO BE FILLED IN BY BIDDER DULY SIGNED)*				
SL. NO.	**SECTION/ SUB-SECTION**	**DESCRIPTION**	**BIDDER'S RESPONSE (Complied / Not Complied /Deviation/Not Applicable)**	**TO BE FILLED BY THE BIDDER** **Relevant Location in their Bid to support the remarks / compliance** **(Reference of Document name / Serial number / Page number of bid for documentary evidence)**
		be maintenance free, lead acid type/ gel based, mounted near the starting motor. Corrosion resistant or coated steel battery rack shall be provided. Required cables shall be furnished and sized to satisfy circuit requirements. 8.2 CHARGING SYSTEM – Suitable independent standard battery charging system as per OEM design for charging of batteries as used in above starting of the engine shall be provided. 8.3 AIR INTAKE SYSTEM - shall include dry type paper filters element and vacuum indicator for servicing air cleaner as per manufacturer standard. Maximum air intake restrictions with clean and choked filters shall be within prescribed limit of the OEM/ manufacturer recommendation for the particular model of the engine. Air cleaners shall be either medium or heavy as per manufacturer standard for gen set application. 8.4 LUBRICATION SYSTEM - forced feed pressure lubrication system with lubrication oil filters with replaceable elements as per manufacturer standard. Necessary gear driven oil pump for lubricating oil, oil coolers, priming of engine bearing as per manufacturer recommendations. The sump shall have adequate capacity to continue operation up to 500Hrs. /1000 Hrs. without Lube Oil Change. 8.5 FUEL SYSTEM - fuel system shall comprise isolation valve, gas filter, gas scrubber, gas pressure reducer, solenoid valves, etc. Gas shall be available at around 20-30 psig pressure at gas train inlet. Gas engine shall be suitable to operate at this pressure. 8.6 IGNITION SYSTEM- The ignition system shall be a high energy digital, capacitor-discharge system (preferably Altronic CD200) *or as per Manufacturer's standard* designed for use on small, 1-to-8-cylinder industrial gas engines having the following features: • Universal, low-cost, microprocessor-based programmable configuration to select the feature set appropriate to the application: o Timing curves vs. RPM or analog signal, o Selectable spark energy,		

BID EVALUATION MATRIX (TECHNCIAL SPECIFICATION) *(TO BE FILLED IN BY BIDDER DULY SIGNED)*				
SL. NO.	**SECTION/ SUB-SECTION**	**DESCRIPTION**	**BIDDER'S RESPONSE (Complied / Not Complied /Deviation/Not Applicable)**	**TO BE FILLED BY THE BIDDER** **Relevant Location in their Bid to support the remarks / compliance** **(Reference of Document name / Serial number / Page number of bid for documentary evidence)**
		○ Individual cylinder timing adjustment, ○ Adjustable overspeed trip, • Comprehensive diagnostics for troubleshooting • Windows™-based terminal program for configuration and monitoring, • Modbus RTU communications and monitoring 8.7 GOVERNOR - The governor (electronic/ mechanical) shall be compatible with the ignition system specified in clause no. 8.6 above and capable of isochronous frequency regulation from no load to full rated load. It shall control engine speed and transient load response to meet ISO 8528 G2/G3 performances and tolerances. It shall be selected, installed, and tested by the engine manufacturer. **Note:** *The engine speed shall be so maintained that frequency variation at constant load including no load shall remain within a band of 1% of rated frequency.* 8.8 ENGINE EXHAUST SYSTEM- a) Exhaust system with smooth bends to create minimum back pressure, with suitable residential grade silencer (at optimum location) to reduce the noise level upto 75 dB and inbuilt Spark Arrestor. The silencer shall have an end inlet and end outlet with its horizontal tail end with 45 degrees downward cut to avoid rainwater entry or with rain cap vertical end. The exhaust flexible shall have its free length when it is installed. The exhaust shall be terminated above the building / enclosure. The termination height shall be calculated with following formula: H = h + 0.2 x square root-over of kVA, where H = Height of termination (in Meter), h = height of Building / Enclosure (in Meter)		

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		b) Exhaust piping shall be of MS pipe (Schedule B) conforming to relevant IS. The runs forming part of the factory assembly on the engine flexible connections upto the exhaust silencer shall be exclusive of exhaust piping item. 50mm thick loosely bound resin (LBR) mattress/mineral wool/Rockwool, density not less than 120kg/sq. meter and 0.6mm thick aluminium shall be used for cladding work. Load or stress shall be prevented on the turbocharger. 8.9 NOISE and EMISSION COMPLIANCE: Test certificates towards compliance of noise and emission norms as per latest CPCB II guidelines for gas engine and generator set shall be furnished along with the technical bid. The bid will be liable to be rejected in the event of non-submission of the CPCB compliance certificates. 8.10 COOLING SYSTEM - System shall be designed for ambient temperature of 40 Deg C. It shall have closed coupled radiator subject to the engine manufacturer's standard design. 8.11 ACCESSORIES: The engine shall be fitted with the following accessories subject to the design of the manufacturer: a) Engine over speed protection. b) Vibration dampeners. c) Non sparking guard for coupling d) Dynamically balanced Flywheel e) Necessary flexible coupling and guard for alternator and engine f) Rain Cap for vertical Exhaust Emission 8.12 INSTRUMENTATION & CONTROLS: Engine shall be provided with the following instruments and controls for the efficient operation and safety. It shall be simple and easy to operate and maintain. All controls shall operate in fail-safe mode.		

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		a) Start/ Stop Switch b) Battery Charging Indication c) Lube oil pressure indication, alarm and shut down d) Low lube oil trip indication e) Water temperature indication f) High water temperature indication, alarm and shut down g) RPM indication h) Over-speed indication, alarm and shut down i) Engine hours indication j) Engine Fail System: Engine Stop function shall be possible by two independent devices: (a) Automatic cutting off the gas fuel supply and (b) or as per manufacturer's standard.		
9.0	**ACOUSTIC ENCLOSURE**	(Refer **SECTION B** for specification of Acoustic enclosure, Enclosure Illumination and Enclosure Earthing Arrangement.)		
10.0	**ONLINE GAS MONITORING SYSTEM**	Continuous Online Gas Monitoring System, as specified here under, shall be installed inside the Acoustic Enclosure. 10.1 Detector / Gas Sensors: Minimum 02 nos. of sensors shall be provided 10.2 Type: IR (Infrared), suitable for detection of Natural Gas (By Volume CH4: 89.538 %, N2: 1.004 %, CO2: 0.543 %, C2H6: 4.132 %, C3H8: 2.491 %, Others: 2.292 %) 10.3 Range: 0 to 100 % LEL 10.4 Operating Temperature: 0 to 50 Deg C 10.5 Display: Digital LCD Display 10.6 Alarm Setting: Variable 10.7 Shut down setting: Variable 10.8 Control system: Suitable control system to be provided for alarm and safety shut down of the engine 10.9 Sensor calibration: Adjustment of Zero & Span on-site Non-Intrusive one man calibration shall have facility to calibrate the instrument on spot without		

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		disconnecting from power supply by using any portable hand held intrinsically safe calibrator. 10.10 Detectors must be suitable for hazardous environment i.e., Zone 1 & Zone 2 hazardous area Gas Group IIA & IIB. 10.11 Copy of Test Certificates from any NABL accredited test laboratories for the quoted Detector / Sensors, tested and approved as per relevant Indian/International Standard must be submitted along with the supply, as per OMR 2017		
11.0	**SKID**	Engine and Alternator shall be directly coupled or coupled by means of flexoplate /flexible coupling as per manufacturer standard design and both units shall be mounted on a suitable designed common bed plate together with all auxiliaries to ensure perfect alignment of engine and alternator with minimum vibrations. The bed plate shall be suitable for installation on suitable anti-vibration mounting system. The bidders are advised to note that the generator set shall be moved frequently from location to location thereby prone to abuse of transportation. The skid/base shall be designed to help protect against damage and misalignment that could result while the unit is being moved. It shall be such that it shall help to isolate the generator set from impact loads that occur during movement and from distortions of the skid/base resulting from rough handling, protecting the generator driveline and its alignment.		
12.0	**PAINTING & PACKING**	12.1 Painting shall be done as per standard practice of manufacturer. 12.2 The packing shall be roadworthy for transportation up to site, sufficiently robust to withstand rough handling. 12.3 Boxes/packing cases containing electrical equipment shall be waterproof lined. 12.4 All the matters on the control panel shall be packed separately for mounting at site or mounted in such a manner to prevent transit damage 12.5 All manuals, books, digital items (CDs) shall be separately packed and contained in rigid plastic pouches. 12.6 All manuals, drawings, documents, and digital items of engine shall be packed in		

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		one separate container and the container shall be separately handed over to OIL at delivery of the Gen sets.		
13.0	**EQUIPMENT DATA SHEET AND NAME PLATE/ MARKING**	13.1 EQUIPMENT DATA SHEET (Refer **ANNEXURE-III** for details of data sought) 13.2 NAME PLATE The following data shall be engraved on the name plate: 13.2.2 Gas Engine: Manufacture's Name, Model, Sl. No. & Year of Manufacture, Rated BHP, Rated RPM, Weight in Kg., OIL's Purchase Order No. 13.2.3 Alternator: Manufacturer's Name, Sl. No: Type & Frame Ref, Rated Output in kVA & kW, Type of Duty, Rated Power Factor, Frequency, Rated Voltage, Number of Phases & Type of Connection, Rated Speed (RPM), Class of Insulation, Excitation Current & Voltage at Rated Out Put, Year of Manufacture &, Weight in Kg., OIL's Purchase Order No. 13.3 Marking: The genset system should be clearly and permanently painted on the outside of the enclosure with the following information: (c) WBS no: *(OIL will provide the WBS no.)* (d) Order no:		
14.0	**SPARE PARTS**	14.1 The following spare parts required for two-year operation and maintenance of the engine shall be supplied along with the Order. Bidders shall provide the price, along with the part numbers, of the following spares that we envisage shall be required for maintenance of the genset for at least two years.		

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		Gas Engine: (i) Spark Plug: 1 complete Set, Per Engine (Total: 2 X no. of cylinders) (ii) Ignition Transformer/coil: 1 complete Set, Per engine (Total: 2 X no. of cylinders) (iii) Set of Lube Oil Filter Elements: 6 Set Per Engine (iv) Set of Air Filter Elements: 6 Set Per Engine (v) Gas filter element (of gas train): 04 nos. Per engine (vi) Gas regulators: 1 complete Set (Stage 1 and Stage 2), Per Engine (vii) Set Of Vee Belts: 1 Set Per Engine (viii) Tappet Cover Gasket set: 4 complete Sets, per engine (ix) Self-Starter: 1 no. (x) Battery Charging Alternator: 1 no. (xi) Ignition System (Altronic or as per manufacturer's standard): 1 no. 14.6 The bidder must note that the above-mentioned spares are mandatory maintenance spares and are to be supplied along with the order. 14.7 For electrical spares please refer to **SECTION A**. 14.8 **The cost of the spares as per clause no. 14.1 and 14.3 above should be provided separately and included in the total cost of each genset package; and shall be considered during commercial evaluation of the offer. Price of each individual spares as per clause no. 14.1 and 14.3 is to be provided as per note below.** **Note:** ***The price of these spares must be included in the Total Price of each unit***. *However, specific description, part numbers etc. (if available) and unit price of each & every spares shall be provided separately as pdf. document under*		

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		"Financial Documents" *while submitting the Price Bids in GeM Portal.* ***Please note that no price should be mentioned in the Technical Bid.*** 14.9 **RECOMMENDED SPARES** a. The bidder shall furnish a list of spares & components that will be required for regular operation and maintenance, overhauling etc. throughout the life of the equipment complete with price. Annual consumption of each spare should be furnished in a tabular format. The bidder should also provide detailed spare list of all the items including bought out items in the operation and maintenance manuals. The list should include a spare parts list along with OEM part numbers, make & model of the equipment and contact postal address of OEM for all items of the whole unit. b. The bidders must submit a written undertaking (along with the bid) that they would be able to supply all the requisite spares and consumables (including bought out items) for a minimum period of 10 (ten) years from the Certified date of completion/ successful field commissioning of the unit.		
15.0	**SUBMITTALS**	15.5 **Following documents shall be submitted along with the technical bid:** (i) Certificate/ declaration from the Engine Manufacturer against clause nos. from 6.6 to 6.10. (ii) GA drawing of Generator Set and Control Panel. (iii) Engine Data Sheet (iv) Manufacturers' product catalogues (v) Acoustic Enclosure Dimensions indicating height, etc. (vi) Exhaust piping arrangement including height of exhaust. (vii) Transient response of frequency and voltage for the generator set. (viii) Auxiliary Equipment - Specification or data sheets, including switchgear, spring type vibration isolators. (ix) Drawings- General dimensions drawings showing overall generator set		

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		measurements, mounting location, and interconnect points for load leads, fuel, exhaust, cooling and drain lines. (x) Wiring Diagrams – Electrical Wiring diagrams, schematics of Generator & control panel (xi) Warranty Statements. (xii) Standard Engine Shop Manual (Engine Rebuilding Manual) from Engine OEM: The bidder shall submit, in their technical bid, undertaking for supply of the Standard Engine Shop Manual from OEM in the event of order placed upon it. (xiii) CPCB compliance certificates for emission and noise level. (xiv) Undertaking from: a) OEM of Engine and b) OEM of Alternator *(in original on OEM's letter head)* shall be submitted by the bidder along with technical bid, guaranteeing uninterrupted supply of spares and availability of service for at least 10 years with effect from delivery of the Item / product for the item / product to be supplied under the Tender / Order, in the event of placement of order		
		15.6 Drawings for approval on award of the order: The following drawings shall be submitted to OIL within one month of placement of the purchase order (Minimum 2 sets of hard copies). The supplier shall get them approved from OIL before start of the manufacturing works. The approval of drawings however does not absolve the contractor not to supply the equipment/materials as per agreement, if there is any contradiction between the approved drawings and agreement.		

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		(i) Layout drawings of the equipment to be installed including control cables, fuel / lube oil pipes and supports/structure for exhaust piping, chimney and bus ducts / cable trays. (ii) Drawings including section, showing the details of erection of equipment. (iii) Electrical wiring diagrams from engine-alternator set to electrical control panel, including the sizes and capacities of the various electrical/control cables and equipment. (iv) Dimensioned drawings of Acoustic enclosure/Engine-alternator set and electrical control panel. (v) Drawings showing details of supports for pipes, chimney cable trays, ducts etc. (vi) Any other drawings relevant to the work. 15.7 Documents for submission before the pre-dispatch inspection: Two copies of the Integrated Operation & Maintenance Manual for the complete Generator Set including operating instructions with description and illustration of all switch gear controls & indicators, all generator controls and all engine controls. 15.8 As built Drawings/Documents to be furnished on completion of installation & commissioning: (Quantity of Drawings and Documents to be submitted: 5 set + 1 set X Number of Generating Sets to be supplied): a) Generator set installation drawings giving complete details of all the equipment, including their foundations. b) Line diagram and layout of all electrical control panels giving switchgear ratings and their disposition, cable feeder sizes and their layout.		

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		c) Control wiring drawings with all control components and sequence of operations to explain the operation of control circuits. d) Manufacturer's technical catalogues of all equipment and accessories e) Integrated Operation & Maintenance Manual for the complete Generator Set including operating instructions with description and illustration of all switch gear controls & indicators, all generator controls, and all engine controls. f) Engine Shop Manual (Engine Rebuilding Manual): 2(two) Copies only for the entire order quantity. g) Parts Books - that illustrates and list all assemblies, subassemblies, and components, except standard fastening hardware (nuts, bolts, washers, etc.). h) Routine Test Procedures - for all electronic and electrical circuits and for the main AC generator. i) Troubleshooting Chart - covering the complete generator set showing description of trouble, probable cause and suggested remedy. j) Wiring Diagrams and Schematics - showing function of all electrical components. k) Alternator Operation, Maintenance & Spare Part Manual. l) Generator Set Test Certificate. m) Certificate that the item has been designed, manufactured, and tested conforming to the requirements & specifications n) OEMs test certificates for individual sub-assemblies (if any). o) Warranty Certificate p) Complete step-by–step Safe Operating Procedure (SOP) for the complete generating set		
16.0	**STAGE INSPECTION AND TESTING**	(For inspection and testing of electrical items refer **SECTION A**) OIL as purchaser shall have right to carry out stage inspection and shop visit to inspect the manufacturing progress but such inspection shall not relieve the bidder of his responsibility		

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		to ensure that the equipment supplied is free from all manufacturing and other defects and conform to correct specifications.		
17.0	**PRE-DISPATCH INSPECTION**	(i) **Pre-delivery inspection shall be performed by OIL to ensure all generating set components, controls, and switchgear are included as specified herein, free from any defects and carry full load tests on every generating set prior to delivery and acceptance. <u>The manufacturer or its representative shall give a notice in advance of minimum four weeks for carrying out pre-delivery inspection and shall arrange staff/fuel/POL and any other consumables for test run at his cost</u>. OIL shall witness such inspection & testing at mutually agreed date**. **<u>To and fro fares, boarding/ lodging and other en-route expenses of OIL's Inspection team for carrying our inspection shall be borne by OIL.</u>** (ii) All major items/ equipment i.e. engine, alternator and associated electrical control panels etc. shall be offered for inspection and testing assembled as unit. (iii) Gensets shall be tested on load banks for the rated KW rating. Testing shall be for a minimum of 1 hour at 80% load, 1 hr. at 100% load, 1 hr. at 110% load. (iv) During testing all controls/ operations safeties shall be checked and proper record shall be maintained by the manufacturer's representative. Any defect/ abnormality noticed during testing shall be rectified. The testing shall be declared successful only when no abnormality/ failure is noticed during the testing. (v) Any defects which become evident during the test shall be corrected by the bidder at his own expense prior to shipment to the jobsite. (vi) The Genset shall be cleared for dispatch to site only when the testing is declared successful by OIL. (vii) A copy of the test results shall be submitted to the OIL at the end of the inspection. Test results shall show manufacturer's tolerances as well as actual parameters recorded.		
18.0	**DISPATCH/ SHIPMENT TO SITE:**	The items shall be dispatched only after OIL's satisfactory inspection and advice for dispatch.		

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19.0	**INSTALLATION AND COMMISSIONING AT SITE**	(i) For installation and commissioning of electrical items refer to SECTION A. (ii) The foundation works required for the installation of the generating sets will be done by OIL. Gas fuel and water supply point will be made available nearest to the generating sets from which points onward the supplier shall extend the lines as per requirement. (iii) Installation and Commissioning of the generating set complete with control panel and Changeover Panel shall be carried out by the supplier at any site located in OIL's Operational Area in Assam and Arunachal Pradesh. (iv) The installation shall be performed in strict accordance with shop drawings, specifications, and the manufacturer's instructions and as per tender specifications. (v) All materials required for installation and commissioning shall be in the scope of the supplier. This includes piping required for extension of engine exhaust. (vi) The supplier shall provide all tools and equipment, all safety gadgets for safe work, labour, appliances, apparatus, etc. at his cost required to carry-out the installation and commissioning work. However, OIL may on request, provide arc welding and oxyacetylene cutting set with necessary hot/cold work permits for the above jobs. (vii) The supplier shall be responsible for safety of its personnel and equipment during the installation and commissioning work. (viii) During the installation & commissioning job, the bidder shall strictly ensure that all the cut ends of cables, packing materials, leftover items are removed from site after completion of work. No environmental damage shall be done while carrying out the job. (ix) All equipment manufacturers/representative shall furnish the services of factory-trained personnel as required during installation and through the warranty period to inspect the installation, supervise start-up of equipment installed, and repair the equipment when required. Service requests shall be answered and acted upon promptly. (x) The responsibility for performance to the specifications shall not be divided among individual component manufacturers but must be assumed solely by the bidder		

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		(supplier). This includes generating system design, manufacture, test, and having a local supplier responsible for service, parts and warranty for the total system. (xi) Bidders should confirm that installation & commissioning is included in the Technical Bid. (xii) **Cost of Installation & commissioning charges should be quoted separately which shall be considered for evaluation of the offers.** These charges should include amongst others to and from fares, boarding/ lodging, local transport at Duliajan and other expenses of the service personnel during their stay at site.		
20.0	**TRIAL RUN AND HANDING OVER TO OIL.**	(i) The generating sets shall be put under trial run for a period of 72 hours following their installation and commissioning. During this period, the generating set should run trouble free from any major/minor troubles and meet the performance standards. A representative of the supplier should be based in Duliajan with no cost to OIL during the trial run period to monitor the performance of the generating sets. (ii) The generator set will be said to have successfully completed the trial run, if no breakdown or abnormal /premature failure of any component of the entire generator set occurs during this period. (iii) Following the successful run-in period, the genset shall be taken over by OIL subject to guarantee/warrantee clause of the tender. This date of taking over of the generator set shall be the date of acceptance /taking over.		
21.0	**SERVICE AND WARRANTY**	(i) The supplier shall ensure adequate and prompt after sales service free of cost during warrantee/guarantee period. In case of accessory/component supplied by other manufacturers the supplier shall furnish a guarantee/warranty from the manufacturer for the same before the generator set is taken over. (ii) The nature of after sales service, which can be provided by the bidder, during initial erection and commissioning as also subsequent operation shall be clearly stated in the quotation. (iii) The manufacturer shall have a local authorized dealer who can provide factory trained servicemen, the required stock of replacement parts, technical assistance, and warranty administration.		

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		(iv) The manufacturer's authorized dealer shall have sufficient parts inventory to maintain over the counter availability of at least 90% of any normal wear and tear parts. (Belts, hoses, filters, turbines, pumps, safeties, regulators, injectors, gaskets) (v) The manufacturer's authorized dealer shall have factory trained service representatives and tooling necessary to install and commission all provided equipment. **(vi) The warranty period for the Gen set and ancillary equipment shall be a minimum of 18 months from the date of dispatch/shipment or 12 months from the date of commissioning of the equipment whichever is earlier.** (vii) The warranty coverage shall include repair parts, labour, reasonable travel expense necessary for repairs at the jobsite, and expendables (lubricating oil, filters, antifreeze, and other service items made unusable by the defect) used during the course of repair or any defects in the engine or alternator during warranty period shall be replaced by the party at his cost without any extra charge to OIL (viii) Running hours shall not be a limiting factor for the warranty coverage by either the manufacturer or the authorized dealer. (ix) Offer received without written warranties as specified shall be rejected in their entirety.		
22.0	**ORIENTATION**	The system manufacturer's authorized dealer shall provide a complete orientation for OIL's engineering and maintenance personnel. Orientation shall include both classroom and hands-on instruction. Topics covered shall include control operation, schematics, wiring and diagrams, meters, indicators, warning lights, shutdown system and routine maintenance. Duration of orientation should be minimum of 2 days.		
23.0	**GENERAL NOTES TO TECHNICAL SPECIFICATION**	a) All sundry equipment, fittings, assemblies, accessories, hardware items, foundation bolts, supports, termination lugs for electrical connections, cable glands, junction boxes and all other sundry items for proper assembly and installation of the various equipment and components of the generator sets are deemed to have included in the tender, irrespective of the fact that whether such items are specifically mentioned in the tender documents or not.		

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		b) The offer shall not be acceptable if the bidder does not quote for all items of the tender, supply, installation, commissioning of all items c) In their offer the bidder must mention their detailed comments pointwise against each point of tender specifications. Any deviation from the tender specification shall be specifically mentioned. Specific type and make of equipment shall be mentioned. All the information required as per tender specifications must be submitted. d) The bidders shall provide overall dimensions of the Genset, Acoustic Enclosure and foundation/installation diagram of the Genset. e) In the event of order, the supplier shall submit to OIL within one month of placement of order all documents and drawings as required against each item. f) The manufacture of the equipment is to be started only after written approval of the drawings / documents by OIL as mentioned in tender against all equipment. g) Bidder must confirm in the Technical Bid that the major equipment such as Gas Engine and Alternator shall have manufacturer's Test Report and Warranty Certificate and the same shall be provided during inspection of the Generator set by OIL.		
24.0	**GENERAL NOTES FOR BIDDERS**	(Bidders shall confirm each & every point clearly. Deviations, if any, shall be highlighted in the quotation.) i) Materials shall be brand new, unused & of prime quality. ii) Pre-dispatch/Shipment Inspection & testing charges, if any, must be quoted separately on lump sum basis which shall be considered for evaluation of the offers. To and fro fares, boarding/ lodging and other en-route expenses of OIL's Inspection team for carrying our inspection shall be borne by OIL.		
SECTION A		**SPECIFICATION OF ELECTRICAL ITEMS**		
1.0	**SPECIFICATION OF ALTERNATOR**	(1) Make of the Alternator shall be within the following: KIRLOSKAR / NGEF / STAMFORD / CROMPTON GREAVES / CATERPILLAR / KATO / GENERAL ELECTRIC, USA / LEROY SOMER / (2) Rated Output: 25 KVA, 0.8 power factor at Specified ambient conditions for utility and motor loads		

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		(3) Rated Voltage: 415 Volts ± 5% (4) Armature Winding: 3 Phase, 4 wire type (5) Rated Frequency: 50 Hz ± 3% (6) Power factor: 0.8 lagging (7) Class of insulation: Class F/H but temp rise limited to class B (8) RPM: As per engine rated speed (9) Phase sequence: UVW - phase sequence and direction of rotation shall be clearly marked on the alternator. (10) Duty/load: Continuous duty rated Alternator. (11) Winding Connection: Y connected. Separate neutral terminal required (12) Ambient: Min: 5 ºC Max: 45 ºC, RH 95% max (13) Alternators Enclosure Protection: IP 23 (14) Alternators Terminal Box Protection: IP 54 (15) Excitation system: Brush less, self-excited, self-regulated with solid state AVR. Voltage characteristics- VG3 as per Table-1, IS 13364: Part 2: 1992 (Reaffirmed in 2018) (16) Mounting: Foot mounted on Gen set skid that should be mounted on anti-vibration pad. (17) Permissible voltage variation: As per Table-1, IS-13364 (Part-2) (18) Permissible frequency variation: As per IS-13364(Part-2) (19) Frame size: Bidder to confirm (20) Waveform deviation: As per IS-13364 (Part-2) (21) Unbalanced current: As per IS-13364 (Part-2) (22) Short circuit current: As per IS-13364 (Part-2) (23) Cooling: Air cooled by integral fan (24) The brush less alternator shall have exciter and rotating rectifier-bridge mounted on shaft complete with diodes and surge suppressor, main field windings and stator windings. PIV of exciter diodes must be 800 Volts or 8 times the maximum		

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		exciter armature operating voltage, whichever is higher. At nominal speed the excitation system must produce sufficient residual voltage in order to ensure self-excitation. (25) All windings shall be made from electrolytic grade copper of high purity. (26) Voltage swing (Transient response): As per IS-13364 (Part-2). (27) The alternator shall be capable of sustaining a 10 % overload for one hour in any 12 hours operation. (28) Total voltage harmonic distortion shall be less than 3 % between phases at no load. (29) The alternator shall be capable of withstanding 1.2 times the rated speed for two minutes without any damage. (30) Alternator stator winding terminals are to be connected to 4 nos. of suitably rated tinned copper terminals, supported on SMC/GRP supports inside the alternator terminal box. (31) The alternator terminal box shall be of suitable size and shall be suitable for terminating power cables of alternator. (32) 2 nos. of earth points are to be provided on both sides of the alternator. (33) Lifting hooks are to be provided for lifting the alternator. (34) AVR shall be suitable for motor loads, VG3 regulation. (35) Alternator windings and AVR shall be suitable for humid atmosphere as per ambient conditions mentioned in the enquiry. (36) Bidder to mention the following information in offer (v) Unbalanced current carrying capacity (vi) Efficiency of the alternator at 25 %, 50 %, 75 % and 100 % load. (vii) Power factor of the alternator at 25 %, 50 %, 75 % and 100 % load. (viii) Dimensional drawings. (37) Alternator frame and enclosure shall be made from MS or Cast steel. (38) The permissible vibration of the alternator shall be as per IS-12075:2008		

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		(Reaffirmed in 2018). (39) The alternator shall conform to the following standards: Latest publications of all IS Standards shall be referred. IS: 12065 Noise limit IS: 12075: 2008 (Reaffirmed in 2018): Mechanical Vibration of Rotating Electrical Machines with Shaft Heights 56 mm and Higher - Measurement, Evaluation and Limits of Vibration Severity IS: 4691 Enclosure Protection IS: 6362 Cooling IS: 2253 Mounting IS: 13364 – Part 2: 1992 (Reaffirmed in 2018): AC Generators Driven by Reciprocating Internal Combustion Engine: Part 2 Rated Above 20 KVA and up to 1250 KVA		
2.0	**SPECIFICATION OF GENERATOR CONTROL PANEL:**	2.1 Electrical control panel of the generator set shall be incorporated & installed inside/outside the acoustic enclosure which will accommodate generator circuit breaker (63A MCCB), an on-load change-over switch(100A), protection relays, metering, control and protection devices (CBCT, ELR) etc. The detailed description of the panel is as follows: a) Design of Genset Control Panel shall be compatible for running the generator in both the following conditions. Exact use at site would be at OIL's discretion. i) Generator Neutral solidly grounded without Neutral Grounding Resistor (NGR). ii) Generator Neutral grounded through NGR to restrict neutral current to maximum 750 mA (to comply with CEA Regulation 2010 clause # 100). However, supply of NGR is not in the scope of the vendor. b) Sheet steel clad, self-supporting, floor mounting, cubicle type, dust and		

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		vermin proof generating set control panel made of 2mm thick MS CRCA sheet and built upon rigid framework of channels, beams as required, having front and rear hinged doors with danger plate fitted on both sides, lifting lugs on top, ventilation louvers on both sides, bottom detachable gland plates, double earthing studs on two sides, complete with suitably sized zinc passivated hard wares with heavy plain and spring washers. c) The panel doors shall have neoprene rubber gasket. d) The panel shall be designed and manufactured as per IS 8623: Part 3: 1993(Reaffirmed in 2018): Low-Voltage Switchgear and Control gear Assemblies - Part 3: Particular Requirements for Equipment Where Unskilled Persons have Access for Their Use. e) The panel enclosure shall be IP 54. Cooling louvers may be provided at bottom and top of the panel sides. Suitable wire mesh shall be provided on the inner side of the louvers to prevent entry of insects. f) The metal surface of the panel shall be given seven tanks anti corrosion treatment and then powder coated in DA grey colour (Min. 50 micron thick paint). g) The frame shall be able to withstand the stress and vibration during transportation and operation. h) All cable entry shall be from bottom side. Removable gland plates shall be provided for all cables. Height of electrical panel from skid/ floor shall be sufficient for entry of the electrical cable with proper bending radius. i) Genset shall be supplied in ready to use condition, complete with all interconnections like connection between generator terminal to generator breaker etc. 2.2 The detail description of the components of the electrical control panel is as described below: The panel shall broadly have the following compartments/sections: i) Incomer & Bus bar Section		

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		ii) Generator Protection Section iii) Generator control section iv) Engine control section v) Change-Over Switch 2.2.6 INCOMER/BUS BAR SECTION - MAIN COMPONENTS: a) Breaker / MCCB: 1 No. 415 V, 63 Amps, 4 pole, MCCB, 25 KA breaking capacity, with inbuilt microprocessor based, adjustable overload & short circuit, earth fault and earth leakage protection, Under voltage trip coil. Earth fault protection can be in-built or separate through separate CBCT and earth leakage sensing relay. Rotary operating handle shall be provided on the panel door for manual operation of MCCB. MCCB shall have suitable indication in case of trip from trip unit of MCCB. MCCB Make: Legrand/ Siemens/Schneider Electric/ABB. The MCCB shall trip on the following faults: (iv) Overload, short circuit and earth fault/earth leakage- Tripping from internal trip unit of MCCB (v) Over/under voltage & Over /under Frequency- From voltage and frequency relays (vi) Engine fault (Low lube oil, high water temp, over speed)- Trip contact from engine protection system b) Busbars: Panel shall have one set of TP & N electrolytic grade, high conductivity, electro tinned copper bus-bars, made from rectangular sections confirming to IS, rated for 600 Amps (Free air rating of sections) and supported at required intervals to withstand short circuit fault levels		

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		up to 36 KA for 1 Sec. Rating of neutral bus shall be minimum 50% of phase bus rating. Bus-bar support shall be non- hygroscope GRP/FRP and the Bus-bar shall be insulated with heat shrinkable PVC sleeves. c) Incoming and outgoing power cables to/from MCCB shall terminate on electrolytic grade, high conductivity electro tinned copper spreader bar/links liberally sized for termination of all power cables. Neutral bar shall also have provision for connection of neutral earth cables. All cables to the panel shall enter through a detachable gland plate (of 3 mm thickness) at the bottom of the panel. All cables shall be terminated through suitably sized single compression glands and connections shall be made through properly rated terminal strips and tinned copper sweating sockets crimped rigidly to the copper conductors. 2.2.7 <u>Generator Protection Section</u>: This section shall have: a) Built-in long-time overload, short time fault, instantaneous short circuit, earth fault protections- in the MCCB. Earth leakage protection from earth leakage module on MCCB or Earth leakage relay with CBCT. ELR shall be adjustable (sensitivity: 0-3 A, time: 0-5 Sec) CBCT make: Schneider/Legrand b) 1 No 3 phase, 4 wire, Microprocessor based, Over and Under Voltage Monitoring Relay for the following protections: viii) Over voltage - 110 % ix) Under voltage - 85 % with 1- 10 seconds time setting Make: Telemecanique (Model RM3 TR114VS7 or higher version models) / ProkDvs (Model-LVM11-34-2CF or higher version models)/equivalent model		

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		of ABB Ltd/ Schneider / Siemens c) 1 No. Over and Under frequency monitoring relay from 40 to 60 HZ with accuracy 0.1%, suitable for 415V Trip time 0-10Sec with LED indication, 2NO+ 2NC contact. Make: ProkDvs (Model -HILO-2C-F or higher version models) / Minilec (FCS D2 or higher version models) / equivalent model of ABB Ltd/ Schneider / Siemens d) Suitably rated CTs of 100/5 , class 5P10 for above (Make: Kappa / Conzerv/ L&T). 2.2.8 <u>Generator Control Section</u>: This section shall have: a) <u>Meters</u>: • 1 No. Three phase analog Voltmeter with selector switch, Size- 96 X 96 mm2, Class of accuracy 0.5, 0 - 500 V, Auxiliary power supply -230 V AC (Make: AEI/ Conzerv / L&T) • 1 No. Three phase analog ammeter with selector switch, Size- 96 X 96 mm2, 0-500 Amps, C.T. operated, Auxiliary power supply 230 V AC, class of accuracy -0.5 (Make: AEI/ Conzerv / L&T) • 1 No. Digital frequency meter, scaled 0-100 Hz, suitable for 240 V AC operation, (Make: AEI / Conzerv / L&T) • 01 no.- Digital multifunction meter indicating Voltage (V), Current(A), Frequency (Hz), Power factor(pf), Active Power (KW), Reactive Power (KVAR), Energy (KWH), Maximum Demand (MD) with RS-485 capability;		

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		make- Siemens (Sentron PAC 3200 or higher version models) / Schneider Group (Model- PM700 higher version models) or equivalent model of ABB, Automatic Electric, Rishabh. • Suitably rated CTs, CT ratio 100/5, class I for ammeter, kW meter and PF meter (Make: Kappa / Conzerv / L&T.) • All meters shall be mounted at the front door of the panel. b) <u>Indications</u>: Following are to be provided: • "Engine running" • Power supply "ON" for R, Y & B phases • "Trip circuit healthy" • "Tripped on Fault" (Electrical fault - From aux contact of trip unit of MCCB) • Over/under voltage • Over/under frequency • Engine fault • Set on load All indication lamps shall be of LED type (Make: Binay/ Technic/ L&T) and shall be mounted in front of the panel. A separate annunciator window (multi-window) with audible alarm for showing engine and alternator faults, gas alarm etc. shall also be provided. Push buttons for acknowledging/ resetting alarms, checking healthiness of trip circuits etc. shall also be provided. c) <u>Fuses</u>: All meters, indication lamps shall be protected by adequate nos. of HRC instrument fuses / MCBs of suitable rating. d) <u>Auxiliary relays</u>:		

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		Auxiliary Relays /Contactors shall be provided as per requirement of the control circuits. (Make: Siemens/Telemecanique/ABB/BCH/L&T/Indo-Asian). All relays shall have minimum 2 nos. spare contacts. Number of relays shall be as per the control circuit requirement. Current rating of aux contacts shall be as per control circuit requirement. Plug in type relays and contactors shall not be used in the control circuitry / panel. 2.2.9 Engine control section: a) This section shall have: • Digital RPM meter -1 No. • Engine alarm and trip condition monitoring • Engine start/stop controls • Battery charger circuit • Emergency stop switch (mushroom head type) b) The following engine conditions shall give alarm indication: • Low lube oil pressure (at low set point) • High water temp. (in case of water-cooled engines) • Engine over speed (at low set point) • Low battery voltage c) In addition, engine shall be stopped with the help of heavy-duty 24V D.C. fuel solenoid on following trip conditions. • Low lube oil pressure • High water temp. (in case of water-cooled engines) • Engine over speed • High Vibration d) Push buttons shall be provided for: • Accept fault		

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		• Reset alarm • Engine start/ stop • Lamp test e) Indication of each of the trips shall be provided in the front multi-annunciator window of the Engine control section. Suitable relay/ timer arrangement shall be provided wherever required. f) Hooter/alarm to indicate Engine trip on fault g) All indication/metering/controls shall be mounted in front of the panel. 2.2.10 CHANGE OVER SWITCH: • Output from the control panel bus bars shall be terminated on a changeover switch. Outgoing cable from the genset shall be connected to the outgoing side of the changeover switch. The other incomer of the changeover shall be reserved for connection to the mains supply / 2nd source. • Description of the changeover switch is as follows. • One no. four-pole on load changeover type switch rated for minimum 100 Amp. The switch shall be mounted/accommodated inside the control panel. • Connection links/spreader bars shall be provided with switch for proper termination of all power cables. • Power wiring from control panel to COS shall be done by the manufacturer. • Sufficient space and arrangement shall also be provided in COS enclosure for entry and termination of main power cables (1 from the MCCB, 2nd from other source & third for power supply to the load centre). • There shall be permanent connection from the MCCB to the Change-over switch(s) by bars / cable(s). 2.3 MOTOR STARTER PANEL (If necessary for operation of GEG as per OEM/manufacturer design) Manufacturer shall also provide starter panels along with necessary cables for any		

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		motors if necessary (e.g. lube oil circulation pump motor, radiator cooling fan motor, enclosure ventilation fan motor etc.) for operation of the GEG sets. The starter panels as required may be accommodated inside electrical control panel complete with breakers / MCCBs or MPCBs (for power isolation), contactors, thermal overload relays, indication lamps, etc. 2.4 WIRING SCHEME i) Control voltage for generator control: 240VAC. Potential circuit wiring of the control system shall be done with 1.5 sq mm, flexible copper, 1100V grade PVC insulated wires approved by ISI, TAC, FIA. All wiring shall have copper lugs & terminal blocks as required. Wiring for lighting circuit MCB, power outlet and wiring for CT shall be done with 2.5 sq mm, flexible copper, 1100v grade PVC insulated wires approved by ISI, TAC, FIA & have copper lugs. Colour code for wires shall be followed as per IS. Make: Finolex/Havells/ L&T/Polycab. ii) All power and control wiring inside the enclosure shall be done at manufacturer's works with armoured cables or with single core cables laid in metallic conduits/ casings. Heavy duty Single Compression Cable Glands shall be provided at all cable entries for armoured cables. Cables with conduit wiring shall have suitable entry clamp. All cables shall be with stranded copper conductor and shall be of 1100v grade and approved by ISI. iii) All control cable terminal ends shall have suitable heavy duty crimping lugs of tinned copper. Ferrules shall be provided for identification of cables. All components shall be labeled for identification. iv) Separate gland plates shall be provided for power and control cables. v) Separate TB shall be provided for all interconnection cables between control panel and engine. vi) Provision of exhaust blower power supply shall be required if the blower is		

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		fitted inside the acoustic enclosure. vii) Power supply arrangement with switching and protection shall be also provided for any auxiliary motor, if installed for genset operation. viii) All auxiliary and main contactors shall be mounted on DIN channel. Plug in relays shall not be used. ix) Engine control wiring shall run from engine to control panel in heavy duty ISI approved galvanized flexible conduit supplied by the party.		
3.0	**DOCUMENTS**	3.1 The following Documents / drawings shall be <u>submitted with the offer</u>: i) GA and schematic drawings of alternator and control panel ii) Technical literature of alternator iii) Confirmation that the party agrees to all the points mentioned under electrical specification of generating set. Any deviation from the electrical specifications of the tender shall be specifically mentioned by the party with proper justification. Acceptance of deviations shall be at the discretion of OIL. iv) Type and make of components shall be as per tender. v) The bidder shall also specifically confirm even if there is no deviation in their offer from technical specifications. 3.2 The successful bidder shall <u>obtain approval for the following drawings/documents</u> prior to manufacturing of alternator & control panel within 30 days of placement of order. i) GA drawing ii) Documentary evidence from the manufacturer of generator confirming that the alternator to be supplied shall meet all specifications as mentioned in the order. Technical catalogue of the generator. x) Detailed power & control wiring diagram, detail enclosure drawings for control panel, Changeover Switch, earthing scheme. xi) Layout plan of the unit showing all parts, cable routes.		

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		xii) Illumination scheme. xiii) Details of power cables, control cable and their routes. xiv) Bill of materials. 3.3 Minimum Two sets (Hard Copies) of following <u>as built drawings / documents</u> per genset along with soft copies shall be submitted in bound form along with gensets: i) GA drawing ii) Detailed power & control wiring diagram, detailed enclosure drawings for control panel, earthing iii) Scheme, layout plan of the unit showing all parts. iv) Details of power cables, control cable and their routes. v) Bill of materials of all components. vi) Technical literature of alternator. vii) O&M manual for Alternator and main components of control panel. viii) Catalogues of various components. ix) All test certificates for tests done at manufacturer's works for alternator, control panel and complete unit. x) Tests done during commissioning. xi) Guarantee certificate for alternator and control panel. Guarantee shall be for 12 months after commissioning of Gen set or 18 months after supply, whichever is earlier. xii) List of recommended spares with cat nos./part nos. & description for two years' O&M.		
4.0	**ELECTRICAL SPARES**	Following spares shall be supplied by the party along with package. 1. AVR Unit for Alternator- One no. per Gen Set. 2. Rotating rectifier assembly fitted with complete set of forward and reverse diodes- One set per Gen set. 3. Generator circuit breaker (63A MCCB)		

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5.0	**INSPECTION AND TESTING FOR ALTERNATOR AND CONTROL PANEL INCLUDING STARTER PANEL** ***as applicable***	All the routine tests as per IS and load tests of the alternator and the control panel shall be witnessed by OIL's Engineer at respective manufacturer's works. The routine test of the alternator shall include the following minimum tests/ measurements: i) Measurement of winding resistances for generator armature, field, exciter armature and exciter field ii) Measurement of insulation resistance (before and after HV tests) for generator armature and field, exciter armature and field iii) High voltage (HV) test iv) Phase sequence test v) Voltage regulation test vi) Vibration measurement vii) Measurement of noise level viii) Overload test ix) Measurement of open circuit and short circuit characteristics x) All the routine tests and load tests of the control panel, changeover panel and starter panel (if provided) shall be witnessed by OIL engineers at manufacturer's works. The routine test of the panels shall include the following minimum tests/measurements: i) Physical checks & Operation checks of all components ii) HV tests iii) Insulation tests (before and after HV tests) **Intimation for inspection for each item must be sent to OIL at least 15 days in advance.**		
6.0	**COMMISSIONING OF ELECTRICAL**	6.1 Installation and Commissioning of the GEG sets with control panels, Auxiliary Motors		

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	PART OF THE UNIT	(if provided, shall be carried out by the supplier as per NEC, ISI, CEA Regulations 2010 etc. at OIL's field area around Duliajan, Assam (India). Qualified and competent electrical personnel of supplier shall be deputed during installation & commissioning of the generating sets. 6.2 All tools, instruments, test kits, etc. required for the job shall be provided by the supplier. Operational tests of all devises, their settings, shall also be carried out during commissioning job by the supplier. 6.3 Accommodation and travel to site for supplier's all persons shall be arranged by supplier. 6.4 All protective devices shall be tested for proper operation and setting done during commissioning by the commissioning person of the successful bidder. All working persons of party shall possess valid electrical license issued/endorsed by Electrical Licensing Board, Govt. of Assam. 6.5 The Gen set shall be treated as successfully commissioned from electrical side after successful load test (reliability run) of the unit at OIL's field site as per details given in Sl. Nos. **15.0**, **19.0** and **20.0** of the detailed description.		
7.0	**GUARANTEE**	Generator and control panel components shall be guaranteed for 12 months after commissioning of Gen set or 18 months after supply, whichever is earlier.		
SECTION B		**SPECIFICATION OF ACOUSTIC ENCLOSURE**		
1.0	**ACOUSTIC ENCLOSURE:**	a) The Acoustic enclosure shall be designed and manufactured conforming to relevant standards suitable for outdoor installation exposed to weather conditions, and to limit overall noise level to 75dB(A) at a distance of 1 meter from the enclosure as per latest CPCB norms under free field conditions. b) The construction shall such that it prevents entry of rainwater splashing into the enclosure and allows free & quick flow of rainwater to the ground in the event of heavy rain. The detailed construction shall conform to the details as under: c) The enclosure shall be fabricated out of the CRCA sheet of thickness not less than		

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		1.6mm on the outside cover with inside cover having not less than 0.6mm thick perforated powder coated CRCA sheet. d) The hinged door shall be made from not less than 16SWG (1.6mm) thick CRCA sheet and shall be made airtight with neoprene rubber gasket and heavy-duty locks. e) All sheet metals parts shall be processed through 7-tank process. f) The enclosure shall be powder coated. g) Ventilation fans shall be provided, exhaust piping inside the enclosure must be lagged (except bellows). h) Temperature rise inside the enclosure shall not be more than 5 Deg C for maximum ambient above 40 Deg C and it shall be below 10 Deg C for ambient below 40 Deg C. i) There shall be provision for oil, coolant drain and fill. j) The batteries shall be accommodated in the enclosure in battery rack. k) The canopy shall be provided with high enclosure temperature safety device. l) The acoustic lining shall be made up of high-quality insulation material i.e. rockwool/glass/mineral wool/PU foam of appropriate thickness and density for sound absorption as per standard design of manufacturer's to reduce the sound level as per CPCB norms. The insulation material shall be covered with fine glass fibre cloth and would be supported by perforated MS sheet duly powder coated/GI sheet/ aluminium sheet.		

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		m) The enclosure shall be provided with suitable size & no. of hinged doors along the length of the enclosure on each side for easy access inside the acoustic enclosure for inspection, operation, and maintenance purpose. Sufficient space shall be provided inside the enclosure on all sides of the genset for inspection, easy maintenance, and repairs. n) The canopy shall be as compact as possible with good aesthetic look. n) The complete enclosure shall be of modular construction. o) The forced enclosure shall be as per manufacturer design using either engine radiator fan or additional blower fan(s). If the acoustic enclosure is to be provided with forced ventilation, then suitable size of axial flow exhaust fan to take the hot air from the enclosure complete with necessary motors and auto start arrangement shall be provided. The forced ventilation arrangement shall be provided with auto stop arrangement to stop after 5 minutes of the stopping of the gen set. p) The inside of the enclosure shall be provided with at least 2 (two) nos. Suitable LED Type luminaire controlled by a 5A switch for adequate lighting during servicing etc. of the gen set. The power supply to this luminaire shall be from the load side of the panel so that it can remain energized under all conditions. q) The control panel for the Generating set shall be installed separately inside the acoustic enclosure. r) A high temperature trip system (to shut down the engine by cutting off fuel supply to the engine through the solenoid valve) with variable setting connected to a thermostatically controlled blower must be provided for eliminating excessive heat dissipated by the engine within the acoustic enclosure.		

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		s) Suitable continuous online Temperature Monitoring and Control System with Alarm and Shut Down Mechanism shall be provided. t) When the concentration of gas inside the acoustic enclosure reaches 10 % of LEL of gas, audio visual alarm shall activate, and automatic preventive measure shall activate to reduce the concentration of leakage gas. These preventive measures include switching on heavy duty exhaust fan to disperse leakage gas or stoppage of gas leakage itself. u) When the concentration of gas inside the acoustic enclosure reaches 15 % of LEL of gas (or any other suitable rating), the alternator main circuit breaker shall trip automatically and subsequently the engine shall be shut down instantaneously by automatic device (i.e., cutting off power supply to the fuel solenoid valve.) v) A separate Blower of suitable size (size/capacity to be specified in the offer) shall be provided and it shall be in operation even if the thermostatically controlled blower stops / fails. There shall be a provision of emergency shutdown of the generating set (Prime Mover) from outside the enclosure.		
2.0	**SERVICE ACCESSIBILITY**:	Genset /engine control panel shall be visible from outside the enclosure. a) Routine/periodical check on engine/alternator (filter replacement and tappet setting etc) shall be possible without dismantling acoustic enclosure. b) For major repairs/overhaul, it may be required to dismantle the acoustic enclosure. c) Sufficient space shall be available around the genset for inspection and service.		
3.0	**ENCLOSURE ILLUMINATION**	(i) A separate circuit shall be provided for lighting of the acoustic part of the enclosure. Minimum 2 Nos. LED lamps shall be fitted in wall mounted type/ bulkhead light fittings.		
4.0	**ENCLOSURE EARTHING ARRANGEMENT**:	Two nos. of 50x6 mm GI straps (earth bus) shall be provided inside the enclosure on both sides and fixed on the skid floor. The earth loops from alternator, control panel, changeover panel, auxiliary motors (if provided) shall be connected to these straps with		

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		two distinct and independent GI earth straps of sufficient size as per IS 3043. Earth leads and earthing jobs as per IS-3043. Suitable studs with fastener arrangement shall be provided on the earth buses for connection of earth straps to outside earth electrodes.		
SECTION C		**SPECIAL TERMS AND CONDITIONS**		
1.0	The Engine and the Alternator (in case of bought out item) must be purchased from the respective OEM or the authorized dealer of OEM of these items and such purchase documents must be submitted along with the supply of the items. Bidders must furnish undertaking to comply with the same in their technical bids.			
2.0	Undertaking from the OEM of Engine and Alternator (in original on OEM's letter head) shall be submitted by the bidder along with technical bid, guaranteeing uninterrupted supply of spares and availability of service for at least 10 years with effect from delivery of the Item / product for the item / product to be supplied under the Tender / Order, in the event of placement of order.			
CHECKLIST				
1.0	Whether quoted as manufacturer?			
2.0	Whether quoted as OEM Dealer/Supply House?			
3.0	If quoted as OEM Dealer/Supply House -			
	a) Whether submitted valid and proper authorization letter from manufacturer confirming that bidder is their authorized Dealer/supply House for the product offered?			
	(b)Whether manufacturer's back-up Warranty/Guarantee certificate submitted?			
4.0	Whether agreed to the tender warranty clause of the tender?			
5.0	Whether confirmed Bid validity as per tender requirement?			
6.0	Whether quoted a firm delivery period as per the tender requirement?			
7.0	Whether confirmed to submit PBG as asked for in tender as per **FORMAT – E**?			
8.0	Whether confirmed Bid Validity as per the tender requirement?			
9.0	Whether confirmed Payment Terms as per the tender?			

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10.0	Whether quoted as MSE unit? If yes, whether necessary document submitted?			
13.0	Ministry of Finance of Govt. of India, Department of Expenditure, Public procurement Division vide office memorandum F. No. 6/18/2019-PPD dated 23rd July, 2020(order-Public Procurement no.1) has proclaimed the insertion of Rule 144 (xi) in the General Financial Rules (GFRs), 2017 w.e.f. 23rd July, 2020 regarding restrictions on procurement from a bidder of a country which shares a land border with India on the grounds of defence of India on matters directly or indirectly related thereto including national security. Bidders are requested to take note of the office memorandum and submit their offers accordingly, wherever applicable. In this regard, bidders must submit duly sealed & signed undertaking as per format provided vide, **PROFORMA - D**" along with the technical bid. Whether uploaded along with the bid?			
14.0	Whether indicated the country of origin for the items quoted? Please mention the "Country of origin" under Remarks here.			

ANNEXURE – VII

BID EVALUATION MATRIX (BEC/BRC)

BID EVALUATION MATRIX (BEC/BRC) *(TO BE FILLED IN BY BIDDER DULY SIGNED)*			
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A.	**TECHNICAL**		
A.1.0	**Bidder's Eligibility:** The bidder should either be an - (i) OEM (Original Equipment Manufacturer) of the Engine/ Alternator/ Generator set. **OR** (ii) Authorized dealer of OEM of Engine/ Alternator/ Generator set **Note**: *A copy of the Certificate of Incorporation (if the bidder is OEM) and a copy of valid authorized dealership certificate (if the bidder is Authorized dealer) must be submitted in the technical bid.*		
A.2.0	**Bidder's Experience:** (i) The bidder/OEM must have supplied to any Government/Semi Government bodies/Public Limited Company in India during the last 05 (five) years as on original bid closing date of the tender: (a) Gas Engine Driven Generating Sets (of capacity 25 kVA or above) of value not less than **INR 16.27 lakhs** in a single order. **OR** (b) At least 01 (One) nos. Gas engine driven Generating Sets of capacity 25 kVA or above in a single order.		

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	(ii) Documentary evidence in respect of manufacturing & supply, either from the OEM/Bidder should be submitted with the technical bid, in the form of copies of relevant signed Purchase Orders along with copies of any of the following documents in respect of satisfactory execution of the Purchase Order failing which the bid will be rejected. (a) Signed & sealed satisfactory supply/ completion/ installation report (in original on user's letter head) (OR) (b) Bill of Lading (OR) (c) Consignee delivery receipt/ challan (OR) (d) Central Excise Gate Pass/ Tax Invoice issued under relevant rules of Central Excise/Vat./GST(OR) (e) Commercial Invoice/ Payment Invoice. **<u>Notes to Clause No.A.2.0 above</u>:** *a. The purchase order date need not be within 05(five) years preceding original bid closing date of this tender. However, the execution of supply should be within 05(five) years preceding original bid closing date of this tender.* *b. A supply order executed by a bidder for its own organisation/subsidiary cannot be considered as experience for the purpose of meeting BEC.*		
A.3.0	The engine shall be of four-stroke cycle, spark-ignited, radiator cooled, in-line naturally aspirated /turbocharged/turbocharged after-cooled gas engine with mechanical governing/ electronic Engine Control Unit integrating governing, monitoring and diagnosing features and functions, capable of operating without any external ventilation system at the given site conditions and should be suitable for generator drive meeting the latest CPCB norms/ norms of the Environment (protection) Rules 1986 *[section: 95A for Genset run on dedicated Natural Gas (NG) or Liquid Petroleum Gas (LPG); Notification no. GSR 281(E) dated 7th*		

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	March 2016 issued by Ministry of Environment, Forest & Climate Change, Government of India] for emission and noise level. **Note to Clause no. A.3.0**: *A valid copy of both the Type Approval and Conformity of Production (COP) certificates of the offered engine model and generating set should be submitted with the technical bid for compliance towards –* *(i) emission norms* *(ii) noise norms*		
A.4.0	The rated output of the engine at 1500 RPM should be suitable for driving generator set of capacity 50 kVA Prime Duty and Performance Class not less than G2/G3 as per ISO 8528-5 with natural gas fuel and compression ratio not exceeding 12:1. The bidder must submit the manufacturer's (OEM) product catalogue of the engine/generating set where the rated output should find mention in it in the technical bid.		
A.5.0	The offered genset engine model should have proven track record of not less than 2400 running hours in one single unit. Documentary evidence such as supply/purchase order copy and satisfactory performance certificates from the owner/user with the Make and Model of the genset clearly appearing in the body of the above documents should be enclosed with the technical bid.		
A.6.0	**DELIVERY PERIOD**: **Delivery of all the Genset Packages must be completed within 270 DAYS from the date of issue of Purchase order.** **Installation & Commissioning shall be completed within 90 DAYS from the date of receipt of site clearance from OIL.**		

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	(Please refer to Clause no. 20.0 of Annexure – I (Section A): TRIAL RUN AND HANDING OVER TO OIL regarding acceptance/taking over of the gensets) Bids submitted by Bidders quoting delivery period more than the abovementioned duration shall not be accepted. Bidders must categorically confirm the delivery period in their Technical Bid.		
B	**FINANCIAL CRITERIA**		
B.1.0	The bidder shall have an annual financial turnover of minimum **INR 16,27,097.20** during any of the preceding 3 (Three) financial/accounting years reckoned from the original bid closing date of the tender. *[Annual Financial Turnover of the bidder from Operations shall mean - "Aggregate value of the realization of amount made from the sale, supply or distribution of goods or on account of services rendered, or both, by the company (bidder) during a financial year" as per the Companies Act, 2013 Section 2 (91)]*		
B.2.0	"Net Worth" of the bidder should be positive for the financial/accounting year just preceding to the original bid closing date of the tender. *[Net worth shall mean: "Share capital + Reserves created out of profits and securities Premium - Aggregate value of accumulated losses (excluding revaluation reserves) - deferred expenditure - Miscellaneous Expenditure to the extent not written off and carried forward loss - Reserves created out of write back of depreciation and amalgamation"]*		
B.3.0	Considering the time required for preparation of Financial Statements, if the last date of preceding financial / accounting year falls within the preceding six months reckoned from the original bid closing date and the Financial Statements of the preceding financial / accounting year are not available with the bidder, then the financial turnover of the previous three financial / accounting years excluding the preceding financial / accounting year will be considered. In such cases, the Net worth of the previous financial / accounting year excluding the preceding financial / accounting year will be considered. However, the bidder has to submit an affidavit/undertaking certifying **(PROFORMA – A)** that 'the balance sheet/Financial Statements for the		

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	financial year (As the case may be) has actually not been audited so far'. **Note:** a) For proof of Annual Turnover & Net worth any one of the following document must be submitted along with the bid:- i) A certificate issued by a practicing Chartered/Cost Accountant (with Membership Number and Firm Registration Number), certifying the Annual turnover & Net worth as per format prescribed in **PROFORMA - B**. OR ii) Audited Balance Sheet along with Profit & Loss account. b) In case the bidder is a Central Govt. Organization/PSU/State Govt. Organization/Semi-State Govt. Organization or any other Central/State Govt. Undertaking, where the auditor is appointed only after the approval of Comptroller and Auditor General of India and the Central Government, their certificates may be accepted even though FRN is not available. However, bidder to provide documentary evidence for the same.		
B.4.0	In case the Audited Balance Sheet and Profit & Loss Account submitted along with the bid are in currencies other than INR or US$, the bidder shall have to convert the figures in equivalent INR or US$ considering the prevailing conversion rate on the date of Balance Sheet and Profit &Loss Account. A CA certificate is to be submitted by the bidder regarding converted figures in equivalent INR or US$.		
B.5.0	In case the Bidder is subsidiary company (should be 100% owned subsidiary of the parent/ultimate		

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	parent/holding company) who does not meet financial criteria by itself and submits its bid based on the strength of parent/ultimate parent/holding company, then following documents need to be submitted: (i) Turnover of the parent/ultimate parent/holding company should be in line with Para B (1.0) above. (ii) Net Worth of the parent/ultimate parent/holding company should be positive in line with Para B (2.0) above (iii) Corporate Guarantee **(PROFORMA - C)** on parent/ultimate parent/holding company's company letter head signed by an authorized official undertaking that they would financially support their wholly owned subsidiary company for executing the project/job in case the same is awarded to them. (iv) Documents to substantiate that the bidder is as 100% subsidiary of the parent/ultimate parent/holding company.		