OIL INDIA LIMITED
(A Govt. Of India Enterprise) Tel :033 2230 1657, 1658
4, India Exchange Place, Fax :91 33 2230 2596
Kolkata-700001 E-mail :oilcalmn@oilindia.in

Tender No. & Date : KID2835L17/08 26.10.2016

Bid Security Amount : INR 0.00 OR USD 0.00
(or equivalent Amount in any currency)

Bidding Type : Single Bid (Composite Bid)

Bid Closing On : 06.12.2016 at 14:00 hrs. (IST)
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Performance Guarantee : Applicable

OIL INDIA LIMITED invites Limited tenders for items detailed below:

Item No./ Mat. Code	Material Description	Quantity	UOM
10 0C000452	SKID MOUNTED PORTABLE DIESEL ENGINE DRIVEN CENTRIFUGAL SUMP PUMP SET Detailed specifications as per attached Annexure 'A'.	1	NO
	INSTALLATION & COMMISSIONING		
10	INSTALLATION & COMMISSIONING	1	AU

Special Notes : 1. Guarantee / Warranty certificate for one year will be required along with the supply.

2. Validity of offer: 75 days from the date of tender opening. Offer with validity less than 75 days will be rejected.

3. Installation & commissioning to be carried out at site at Duliajan, Assam. Bidder to be quote the installation & commissioning charges separately clearly indicating the applicable service tax.

4. PERFORMANCE GUARANTEE:

Performance Guarantee is applicable against this tender. 10% of the ordered value shall be given as performance guarantee in the form of bank guarantee and shall be valid for 90 days beyond applicable warranty / guarantee / defect liability period (if any). Bidders should undertake in their bid to submit Performance Security as stated above.

5. PATMENT TERMS : 70% payment will be made against supply of materials and balance 30% after satisfactory of commissioning at site along with the installation and commissioning charges aftr adjusting liquidated damages, if any

Kid2835117/08 of 26.10.2016 **ANNEXURE – 'A'**

SKID MOUNTED PORTABLE TYPE DIESEL ENGINE DRIVEN CENTRIFUGAL SUMP PUMP SET:

Sl.No. (Clause)	Description	Detail Specification	Bidder's Remarks (Attach Separate Sheet if necessary)
1.0	Scope of Supply	Skid mounted portable type Diesel Engine driven Centrifugal Sump pump set complete with coupling, Foot Valve with strainer, Flexible Hose for suction & delivery end with ANSI B 150 class end connections, Tail Pieces, Hose clamps/Flanges, Bends with Socket, Pressure Gauges etc. complete set mounted on robust constructed self-loading OIL FIELD Skid for inter location movement.	
2.0	Pump	2.1 Type: Horizontal type, single suction Centrifugal Pump conforming to API Standard 610 / IS 15657 / ISO 13709(Pump Design) and IS 9137 Hydraulic Parameters of the Pump / other applicable IS Codes. Bidders to confirm the same categorically in their bid. 2.2 Service - Continuous NOTE: #Continuous duty# means pump having service operation on full load for a period of 8 hours to 24 hours per day as per Hydraulic Institute Standard application. 2.3 Capacity i) Discharge: 40 KL/Hr (Minimum). ii) Total Head: 100 Mtrs (Minimum). iii) Efficiency: 30% (Minimum) 2.4 Suction condition: Negative, 4 Mtrs (pump need to take a suction from a minimum depth of 4 Mtrs)	

		2.5 Liquid to be handled: Pump should be able to handle following fluids i) Water from natural source such as Ponds/ River water ii) Formation water of maximum salinity of 5000 PPM iii) Crude Oil Contaminated effluent water i.e. mixture of formation water and crude oil, containing 10-30% crude oil where crude oil specific gravity is 0.8 to 0.9. iv) The range of characteristics of fluid to be handled by the pumping unit is given below: PH: 6.5 to 8.5 Dissolved salt content (ppm): 5000PPM CO3: NIL HCO3: 305 Pour Point (Deg C): 27 Crude oil content (% v / v): 10 to 30% Iron content: 1 to 12 PPM Calcium content: 3 to 128 PPM content Suspended solids: 1 to 400 PPM Sulphur content: Traces Oxygen content: 8 PPM (Maximum) Specific gravity: 1 to 0.9 Pumping Temp: 70 Deg C (Maximum) Viscosity of Fluid : 13 CP at 26 Deg C : 17 CP at 24 Deg C : 29 CP at 22 Deg C Climatic conditions: Altitude # 150 meter above sea level Temperature: 45 Deg C Max Average Rainfall: 350 cms Relative Humidity At 21 Deg C: 10 % At 35 Deg C : 95 % At 40 Deg C: 70 % 2.6 Impeller design: Semi open or any suitable type to fulfill the	

		given capacity parameters. 2.7 Material of construction: The MOC of the pump should conform to: (i) API 610: Clause 2.11 with special attention on Appendix-G and Appendix-H. OR (ii) IS-15657: Clause 5.12 with special attention on Annex # G and Annex-H. The MOC of the pump should be clearly mentioned by the bidders in their offer and will subject to approval by Head-Field Engineering. However, the MOC of the pump should commensurate the capacity parameters and the liquid to be handled by the pump. The bidder shall specify in writingthe tests and inspection procedures that are necessary to ensure that materials are satisfactory for the service. 1.8 Lubrication: Oil lubricated. 1.9 Cooling gland: Internal gland cooling (NOTE: Design of Gland and gland packing should be suitable for high salinity formation water handling) 1.10 OTHER ACCESSORIES: Other accessories comprising of 1(one) No. Foot Valve with strainer, 4.5 Meters (minimum) length each Flexible Suction Hose and one no 15 Meters (minimum) length of flexible Delivery Hose, Tail Pieces, Hose clamps/Flanges, Bend with Socket, one no Bourdon tube type pressure gauge for delivery line (0 to 10 Kg/Sq. cm) etc required for complete connection	

		of suction and delivery line for each pump set.	
3.0	Prime mover (Diesel engine)	The prime mover should be a four stroke, diesel engine rated for continuous power. The HP of the engine should be such that, the engine is capable of developing a Net BHP to run the offered pump on continuous duty mode. The engine should run at 1500 rpm. Necessary power calculation to be forwarded along with the bid. Make: Kirloskar / Greaves Cotton / Other equivalent. Site conditions given below: Maximum temperature: 40 Deg C Minimum temperature: 5 Deg C Maximum relative humidity at 35 Deg C: 95 % Maximum altitude above mean sea level: 150 M The engine shall conform to ISO:3046/BS5514/IS 10000 specifications and shall be rated for continuous, power with an overload power rating of 110% of the continuous power corresponding to engine application, for a period of 1hr. within a period of 12 hrs of operation. The engine governing should be in accordance with Class A-2 governing specified in BS: 5514/IS 10,000. The engine should comprise of the following sub systems: 3.1 Cooling System: The cooling system of the engine should be air-cooled comprising of all necessary assembly. 3.2 Air Intake System: The air intake system of the engine should comprise a heavy duty oil bath type air cleaner and an air intake manifold.	

		3.3 Starting System: The staring system of the engine should be a 12 volt electric starting system comprising of a Maintenance free battery of reputed make, battery leads, engine mounted battery charging alternator (preferably Make : LUCAS TVS), 12 volt starter (Make : LUCAS TVS/ DELCO REMY) and a starting ring fitted to the engine flywheel . Battery shall be maintenance free, lead acid type mounted near the alternator. Battery should be housed in a hard rubber or polypropylene case with provision for venting. Required cables should be furnished and sized to satisfy circuit requirements. 3.4 Exhaust System: The exhaust system should comprise of an air cooled exhaust manifold, stainless steel exhaust flexible connection, exhaust silencer, and spark arrestor and piping connections. 3.5 Fuel System: The fuel system should comprise of mechanical governor, fuel injectors, fuel pump, fuel filter assembly, fuel lines and a fuel tank having storage capacity to meet the fuel requirement of 12 hours of full load operation. 3.6 Lubricating System: The lubricating system should comprise of gear driven lubricating oil pump, lubricating oil filter with a replaceable filter element, lubricating oil pan, oil level dipstick and crankcase breather. 3.7 Instrument Panel: The instrument panel should include the following: i. Lubricating oil pressure gauge	

		ii. Starting switch iii. Digital / mechanical tachometer and Hour Meter iv. Ammeter v. Engine #Low lube oil pressure# indication display red lamp 3.8 Engine Safety Controls: Safety shut off/ trip system for tripping the engine in the event of i. Low lubricating oil pressure ii. Engine over speed 3.9 Other Features: i. Flywheel ii. Lifting eyes iii. Guards over belt drive (blower fan drive, charging alternator drive pulley). iv. Standard painting v. SAE standard rotation Note: Provision of guards over belt drives and couplings has become mandatory as per recommendations of OISD & DGMs bodies. 3.10 General Notes: a. The engine shall conform to ISO 3046/BS 5514/ IS 1000 specifications and shall be rated for continuous power with an over load power rating of 110% of the continuous power corresponding to engine application, for a period of 1 hr. within a period of 12 hrs. of operation. b. The engine governing should be in accordance with Class A-2 governing specified in BS: 5514/ IS 10000. c. The bidder should submit the following information along	

		with relevant performance rating curves and engine product catalogues. i. Gross HP developed at rated RPM ii. Deduction for blower fan & charging alternator iii. Net HP developed at rated RPM iv. Fuel consumption at rated power as well as 110%, 75% and 50% of rated load.	
4.0	Drive Arrangement	The Engine will bear a Twin Disc friction type clutch PTO (preferably GP make). (The design calculation to be forwarded along with the offer for evaluation at OILS's end.) The drive arrangement will involve flow of prime mover power through a flywheel mounted clutch PTO to the input shaft of the pump. The couplings to be used (preferably meta-flex type) in the drive arrangement must be specified by the bidder in the offer along with necessary design data for evaluation at OIL's end. All the drive couplings must be suitably protected by non / sparking type coupling guards, with a facility for inspection of the condition of the couplings without removing the whole coupling guard.	
5.0	SKID:	All items detailed in para 1, 2 are to be coupled with preferably metaflex type & be mounted on a oil field type 2 runner skid. The size of the skid should be rigid for withstands vibration of the unit and large enough to provide for sufficient working space around the pump set. The skid floor should be covered with antiskid checkered plate. The skid should be suitable for self-loading purpose.	
6.0	Other Details	Following details are to be provided along with the offer for our technical evaluation. i) Performance chart of the pump including all technical calculations such as hydraulic horsepower volumetric efficiency, mechanical efficiency, rpm. ii)Material specification and constructional features of the pump.	

		ii) NPSHR of the pump. iii) Complete technical details of pumps, engine, coupling, iv) A schematic layout of the master skid showing the engine, pump and all other components of the pump set. v) Installation diagram of pump set. vi) For foundation design during installation of the complete pump-set, the following information is to be supplied:- a) Dynamic load b) Static load c) Unbalanced load vii) Technical calculation for offering the engine with respect to the pump offered. viii) Technical catalogue of the offered pump.	
7.0	Spare Parts	Spares for 2(Two) years maintenance spares for normal operation of the engine, pump and its accessories should be included in the offer. Bidder should indicate the manufacturers' part nos. for each part of pump, engine and its accessories along with the suppliers' own part no if any. The details of 2 years maintenance spares for each pump sets including parts no should be mentioned separately in the offer. The nature of after sales services, which can be provided by the supplier during initial commissioning as also in subsequent operation, should be clearly stated. It should be confirmed that spares for the engine/pump and its accessories offered would be available for at least 10 (Ten) years after delivery of the material. However, the spare will be not considered for evaluation purpose.	
8.0	Tools	1(One) Set each of Special tools for maintenance of each pump should be included in the offer. Details of such tools should be mentioned separately in the offer.	
9.0	Inspection &	a) The plant and materials may be subjected to inspection during	

	Tests	manufacture at the purchaser's discretion, but such inspection shall not relieve the supplier of his responsibility to ensure that the equipment supplied is free from all manufacturing and other defects and conform to correct specifications. The supplier will be notified in advance, if it is intended to inspect plant & materials. b) Except where otherwise agreed the test called for in this specification shall be carried out in the presence of the purchaser or his representative appointed for the purpose and to his satisfaction. All appliances, apparatus, labor etc. necessary for the test shall be provided by the supplier at his cost. c) Pre dispatch inspection will be carried out by OIL at the works of the manufacturer. The complete unit mounted on the skid would be inspected by our engineer. The unit would be load tested at rated pressure and capacity at supplier's factory before dispatch. Accordingly supplier should inform us well in advance. All tests are to be performed as per ISO: 9000 quality products.	
10.0	Material Tests, Certificates	The supplier shall submit the supplier's test certificates of all test pieces proposed to be taken from theCastings or forging subjected to high pressure and also of highly stressed parts. **Hydraulic tests:** Before being dispatched from the suppliers' works all castings/forging and valve shall be hydraulically tested to at least twice their normal working pressure for a period of 30 minutes and certificate thereof should be made available to the purchaser during inspection.	
11.0	Packing, Painting & Protection	Packing shall be sufficiently robust to withstand rough handling during shipment and up country journey. All items shall have their respective identification letters or numbers painted on them and	

		they shall be suitably packed to provide ease of handling and storage and maximum protection during transport and storage period. Crates and boxes shall have a list of items contained therein secured to the exterior by piece of an enveloping piece tin sheet nailed to the wood. A duplicate list shall also be included inside, with the contents, sling points shall be clearly indicated on the crates. Internal parts shall be sprayed with an inhibitor water splitting preservative and all openings shall be covered with masking tape to prevent ingress of water.	
12.0	Installation & Commissioning	The pump sets shall have to be Installed & Commissioned at site by competent personnel deputed by the bidder for the same at their own cost. Scope of commissioning job shall be mentioned in the offer. During commissioning, the commissioning personnel must strictly follow statutory mines rules and regulations.	
13.0	After sale Service	The nature of after sales services, which can be provided by the supplier during initial commissioning as also in subsequent operation, should be clearly stated. It should be confirmed that spares for the engine/pump and its accessories offered would be available for at least 10 (Ten) years after delivery of the material.	
14.0	SPECIAL NOTES:	1. **Delivery Period after placement of Purchase order:**Delivery of all items under the scope of the order must be completed within 9(nine) months from date of firm placement of order. Bidder shall furnish, along with their technical bid, undertaking to complete delivery as specified in this clause, in the event of placement of order on it. 2. **Installation and Commissioning**: The installation and commissioning work of the order that are with the scope of the supplier must be completed within 3(three) months from	

		date of delivery. Bidder shall furnish, along with their technical bid, undertaking to complete the installation and commissioning work as specified in this clause, in the event of placement of order on it.	
15.0	WARRANTY:	The warranty period for the Pump set and ancillary equipment should be a minimum of 18 months from the date of dispatch or 12 months from the date of commissioning of the equipment whichever is earlier. Any defects in the Engine or Pump during warranty period shall be replaced by the supplier at his cost without any extra charge to OIL.	
16.0	Data Sheet	**A. DATA SHEET (PUMP)** MAKE MODEL PUMP TYPE SERVICE LIQUID HANDLED OFFERED RATED SPEED OFFERED RATED PRESSURE DISCHARGE VOLUME@OFFERED SPEED PUMP SUCTION AND DISCHARGE END APPROX HP REQUIREMENT AS PER NIT PARAMETERS EFFICIENCY OF THE PUMP NPSH REQUIRED PUMPING TEMPERATURE LUBRICATION COUPLING TYPE MATERIAL OF CONSTRUCTION PUMP BODY, CASING IMPELLER	

		SHAFT SHAFT SLEEVE **<u>B. DATA SHEET (ENGINE)</u>** MAKE MODEL TYPE RATED SPEED REFERENCE OF STANDARDS ENGINE NET HP METHOD OF STARTING METHOD OF COOLING	
17.0	Technical Check List	1. Whether quoted as OEM of Pump and whether documentary evidences submitted? YES/NO 2. Whether quoted as authorized dealer of Pump and whether documentary evidences submitted? YES/NO 3. Whether quoted as OEM recommended assembler of Pump sets and whether documentary evidences submitted? YES/NO 4. Whether the offered Pump is Single Stage Centrifugal Pump? YES/NO 5. Whether the Pump is designed for continuous service duty? YES/NO 6. Whether the offered Engine conforms to IS Standard with latest amendment as per specifications? YES/NO 7. Whether the power for normal working condition is as per NIT? YES/NO 8. Whether the engine meets NIT criteria? YES/NO 9. Whether the pump is having Capacity & Pressure as per NIT? YES/NO 10. Whether the pump meets materials of construction as per NIT? YES/NO	

		11. Whether the floor of the two runner skid shall be covered by checkered plates? YES/NO 12. Whether the skid is rigid enough to withstand vibration of the unit and suitable for self-loading purpose? YES/NO 13. Whether the two years spares for the packages indicated have been quoted? YES/NO 14. Whether special tools and commissioning spares have been included in the scope of supply? YES/NO 15. Whether spares shall be available for 10 years after supply of equipment? YES/NO 16. Whether separately highlighted any deviation from the technical specifications? YES/NO 17. Whether the Pre-dispatch inspection of the Pump packages shall include Full Load Performance test of the Pump Sets? YES/NO	

Tender No. : **KID2835L17/08**
Tender Date : **26.10.2016**
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Tender issued to following parties only:

Slno	V_Code	Vendor Name	City/Country
1	200392	RAVI BROTHERS	GUWAHATI
2	202678	KISHOR PUMPS PVT LTD.	PUNE
3	202697	SULZER PUMPS INDIA LTD,	NEW MUMBAI
4	202745	WATERTECH ENGINEERS PVT. LTD.	KOLKATA
5	203524	ACC LIMITED	GUWAHATI
6	204295	WELTEK PUMPS (P) LTD	KOLKATA