

**TERMS OF REFERENCE (TOR).****For****Hiring of Services for Troubleshooting, Maintenance and Repair of the Electro-Hydro-Mechanical System Installed at OGDCL 2000 HP, AC VFD Drilling Rigs N-5 and N-6 on Rate Running Contract Basis.****1. BACK GROUND**

Oil & Gas Development Company Limited (OGDCL) is interested to hire the services of an experienced firm or company (hereinafter referred to as the **contractor**) for troubleshooting, maintenance and repair of the electro-hydro-mechanical system installed at its drilling rigs N-5 & N-6. These are 2000 HP, AC VFD land drilling rigs with NOV top drive system acquired by OGDCL in 2014 from RG Petro, China. The units are equipped with state of the art technology. Nature of services and equipment covered under the prospective rate running contract are given in the scope of work at Sr. No. 2 whereas, the terms and conditions for bidders/ contractors are given at Sr. No. 3 and shall be deemed as integral part of the bidding process and subsequent contract.

For a better understanding of the scope of work and equipment involved, bidders are encouraged to visit OGDCL Rig N-5 presently deployed in Zin, Balochistan or Rig N-6 deployed in Nashpa oilfield district Karak, Khyber Pakhtunkhwa before submission of proposals.

**2. SCOPE OF WORK (SOW).****A. Nature of Services Covered Under This Contract.**


Inspection, diagnosis, fault analysis, troubleshooting, maintenance, repair, replacement, up-gradation of existing equipment, installation/ commissioning of repaired or new equipment, installation/ up-loading of software, calibration, configuration and testing of equipment. The mentioned services are primarily required at OGDCL rig sites and in some cases may be provided at the contractor's workshop/ repair facility within Pakistan when provision of the services is not possible at rig site.

**B. Equipment Covered Under This Contract.****a. Rig VFD/MCC House**

Rig variable frequency drive (VFD) house/ motor control center (MCC) and allied accessories/ attachments. Below are given the technical specifications of Rig VFD/MCC House.

HOUSE, VFD CONTROL, RG ASSEMBLED, MODEL EC70DB, AS PER API RP 500B, PLC BASED CONTROLS, CAPABLE TO SUPPLY POWER TO ALL L.V RIG AC LOADS THROUGH A STANDARD MCC, CAPABLE TO CONTROL AND OPERATE FIVE (05) RIG ENGINES/ GENERATORS, 1040 KW (MIN) EACH, DRAW WORKS DRIVEN BY 2X800KW A.C. MOTORS, ROTARY TABLE DRIVEN BY ONE 800 KW A.C. MOTOR, THREE (03) MUD PUMPS EACH DRIVEN BY 2X600 KW A.C MOTORS, PROVISION OF POWER SUPPLY FOR 800 HP TOP DRIVE SYSTEM WITH APPROPRIATE FAULT DETECTING SYSTEM TO ASSIST

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IN POWER SYSTEM DIAGNOSTICS AND FAULT FINDINGS AND 02 SETS OF 10 COLD TONS CAPACITY EACH, HORIZONTAL, INDUSTRIAL, TRANE A/CS COMPATIBLE TO CONTROL THE VFD HOUSE TEMPERATURE AT PEAK LOADS AT 55°C AMB TEMP.

b. **Varco Top Drive System (Varco TDS)**

NOV top drive system (including top drive, top drive control house, top drive driller's control and associated power and control circuit). Below are given the technical specifications of the Varco TDS.

TOP DRIVE SYSTEM, VARCO USA, MODEL TDS-11SA, 800 HP, 500 US TONS DRIVEN BY 2 X 400 HP, AC VFD MOTORS, 0-228 RPM FOR AMBIENT CONDITION -10°C TO 55°C, PRESSURE RATING 5000 PSI, CONTROL VALVE RATING 10,000 PSI WP.

c. **Rig HPU**

Rig hydraulic power unit (HPU) and accessories.

HYDRAULIC POWER UNIT (HPU), RG, MODEL YZ1000FII, 1000 LTR TANK, DRIVEN BY 02 EXPLOSION PROOF MOTORS 37 KW, 380 V, 50 HZ EACH, MOUNTED ON SUB BASE, RATED PRESSURE 16 MPA & FLOW 160 L/MIN.

d. **Rig Draw-works**

Rig Draw-works (including the draw works, DW power and control circuit, DW disc brakes, regenerative braking system and auto driller). Below are given the technical specifications of the draw-works.

DRAWWORKS, RG PETRO, MODEL JC70DB, SKID MOUNTED, WITH 2+2R STEPLESS SPEED SHIFT, SINGLE DRUM, INPUT HP 2000, DRIVEN BY 02 NO. AC VFD MOTORS, YONGJI, MODEL YJ13, 600V, 800 KW EACH. DRAWWORKS SINGLE LINE PULL 485 KN. DRUM GROOVING 1-1/2". LUBRICATION SYSTEM, KEMS AND RG WATER COOLED DISC BRAKE MODEL DPZ70 AND BRAKE CONTROL. NO CONVENTIONAL CLUTCHES AND AUXILIARY BRAKE. DISC BRAKE IS HYDRAULICALLY CONTROLLED WITH INDEPENDENT HPU DRIVEN BY 2X3 KW EXPLOSION PROOF AC MOTORS.

e. **Rotary Table**

Rotary table drive system (including rotary table, rotary table drive, rotary power/ control circuit and rotary brake). Below are given the technical specifications of the rotary table.

ROTARY TABLE, RG, MODEL ZP375, 37-½" OPENING, C/W. YONGJI MODEL YJ13, 800 KW, 600 V AC VFD MOTOR, INDEPENDENT DRIVE SYSTEM, STATIC LOAD RATING AND ROTARY BEAM LOAD CAP 600 US TON WITH SPLIT TYPE MASTER BUSHINGS AND SPLIT INSERT BOWLS.

f. **Driller's Cabin**

Driller's cabin (including cyber chair with joystick control, driller's touch screen and all the installed controls and instruments). Below are given the technical specifications of the

Driller's cabin.

CABIN, DRILLER, RG, MODEL SZF70DB, AIR CONDITIONED WITH COMPUTER SUPPORTED DIGITAL TYPE DRILLER'S CONSOLE WITH

MECHANICAL, ELECTRICAL & PNEUMATIC CONTROLS FOR DRILLING FUNCTIONS EQUIPPED WITH VISIBLE ALL WEATHER PROTECTIVE SYSTEM AND JOY STICK MECHANISM.

**g. Drilling Instrumentation**

Below are given the technical specifications of the drilling instrumentation system.

INSTRUMENTATION SYSTEM, SHENKAI, MODEL SK-2Z16 EQUIPPED WITH DISPLAY PANEL AT DRILLER'S CONSOLE HAVING FACILITIES TO MONITOR AND RECORD ALL DRILLING AND MUD PARAMETERS INCLUDING ALARMING SYSTEM AND ANALOG GAUGES AS BACK-UP TO INDICATE ROTARY/ TOP DRIVE RPM, ROTARY/ TOP DRIVE TORQUE, TONG TORQUE, PUMP STROKES AND PUMP PRESSURE C/W 03 NO. MONITORS, ASSOCIATED CABLES AND ACCESSORIES. MD TOTCO WEIGHT INDICATOR TYPE EB WITH COMPATIBLE DEAD ANCHOR.

**h. CCTV SYSTEM**

Below are given the technical specifications of the closed circuit television system.

CLOSED CIRCUIT TELEVISION (CCTV) SYSTEM, RG, MODEL CCTV70DB, COLOR REMOTE CONTROL CAMERA SYSTEM AT MONKEY BOARD, STABBING BOARD AND UNDER SUB STRUCTURE, MUD PUMPS, MUD SYSTEM, POWER HOUSE WITH MONITOR AND CONTROL AT DRILLER'S CONSOLE AND A MONITOR AT TOOL PUSHER OFFICE.

**C. Scheduled Field Visits.**

Three scheduled visits per year per rig by a group of three service engineers (rig electrical engineer/ chief rig electrician, top drive specialist and mechanical engineer/ chief rig mechanic) as per Clause-3.19 of terms & conditions.


**D. Emergency Field Visits.**

Emergency field visits of service engineer(s) to OGDCL rigs against emergency service calls.

**3. TERMS & CONDITIONS (T&Cs).**

3.1 Bids of only those firms/ companies will be accepted who have at least ten (10) years of experience in repairing and overhauling of AC VFD oil & gas rig equipment and who have a workshop/ repair facility within Pakistan to undertake such repairs. Documentary proof in this regard must be provided with the technical proposal. OGDCL, during technical evaluation of the proposals, may verify the provided information by visiting the bidder's workshop/ repair facility. Following documents may be provided with the technical proposal.


- i. Address of the workshop with detail of available facilities and workforce.
- ii. Detail of clients and repair jobs carried out during the last ten (10) years.

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- 3.2 The contract shall only cover activities performed within Pakistan e.g. provision of intended services, transportation of equipment/ tools and movement of service personnel etc.
- 3.3 The contract shall be initially for two years unless earlier terminated under the provision hereof. Any extension in the term of contract will be subject to mutual consent of both the parties but in any case not to exceed beyond three years and the agreed prices must remain fixed for the whole contract period.
- 3.4 After award of the contract, OGDCL will provide details of rig locations with telephone and fax numbers of contact persons to the qualified firm/ contractor. Similarly contact details of the contractor's focal persons/ dealing personnel will be notified to concerned OGDCL rigs. (Technical Evaluation criteria provided as per Form-B)
- 3.5 Required services are listed in the scope of work (SOW). All bidders to prepare and submit the commercial proposal giving break up of service charges in local currency (Pakistani Rupees) as per attached "**Form-A**". Payment to the prospective contractor will also be made in local currency i.e PKR.
- 3.6 During the course of contract, OGDCL personnel can visit the contractor's facilities any time during working days and hours to witness the ongoing repair jobs and to assess the progress of work on OGDCL equipment repair. Such visits will be arranged at OGDCL's own convenience and cost.
- 3.7 Contractor's personnel will be encouraged to visit OGDCL rigs to check operational status of the equipment for assessment of post service equipment performance or to plan future schedule of maintenance and repair activities and such visits will be arranged at contractor's own convenience and cost and must be intimated minimum two days in advance to respective rig management.
- 3.8 Day rate of a service engineer for working at field/ rig location shall be based on 12 hours working per day and working seven days a week. Service at field/ rig location shall include all types of services e.g. inspection, diagnosis, fault analysis, troubleshooting, maintenance, repair, replacement, up-gradation of existing equipment, installation/ commissioning of repaired or new equipment, installation/ up-loading of software, calibration, configuration, testing of equipment and training of crew etc.
- 3.9 During stay at OGDCL rig site, meals (as per prevailing menu) and accommodation in residential caravans at officers' camp will be provided to the contractor's service personnel by OGDCL. In case of air travel/ hotel stay during transit, the cost and arrangement of air ticket and hotel stay will be on the part of the contractor. OGDCL will only provide pick & drop road transport facility to the contractor's service personnel from nearest airport/ city to a rig site and back.
- 3.10 Traveling to OGDCL rigs shall be in daylight and night traveling shall be discouraged.

- 3.11 Contractor's personnel working at OGDCL rig sites will strictly follow OGDCL HSEQ procedures and OEM recommended procedures for inspection, maintenance, repair, installation, commissioning, calibration, configuration and testing of equipment.
- 3.12 Safety and health issues regarding Contractor's service personnel working at OGDCL rig site will be Contractor's responsibility. Only first aid will be provided by OGDCL in case of medical emergency.
- 3.13 Contractor will assign qualified and trained workers for the intended services and contractor will be liable to replace any service person immediately if his behavior or working is found unsatisfactory by OGDCL and such replacement should be without any cost to OGDCL.
- 3.14 The Service engineer at field will inspect, repair and troubleshoot the faults and will advise on sending the defective equipment/ assemblies or parts for repair to contractor's workshop in cases where field repairs are not possible.
- 3.15 OGDCL will not provide any tools required for any job. It will be Contractor's responsibility to have all required tools at the work place. Fabrication of fixtures and supports and packing required for safe transportation of equipment to Contractor's workshop will be OGDCL's responsibility. Fabrication of fixtures and supports and packing required for safe transportation of equipment from Contractor's workshop to OGDCL rig site will be responsibility of Contractor's.
- 3.16 OEM recommended, new, unused and genuine parts and assemblies only will be acceptable for maintenance and repair services under this contract. Services provided under this contract shall have a standard warranty of the contractor under normal operating conditions
- 3.17 An equipment/ component shall be repaired at field or at Contractor's workshop only after due satisfaction/ consent of concerned rig Management. OGDCL will share the available technical literature (O&M manuals, workshop manuals and parts manuals) of the listed equipment if demanded by the contractor for the purpose of maintenance and repair.
- 3.18 Repairs at the contractor's workshop will be charged separately as per rates given in **Form-A** (service charges).
- 3.19 Contractor's three service engineers (rig electrical engineer/ chief rig electrician, top drive specialist and mechanical engineer/ chief rig mechanic) will pay three scheduled visits annually to each rig for checking, function testing and subsequent maintenance, repair and troubleshooting (if required) of the listed equipment.
- i. Service charges for the mentioned scheduled rig visit to be quoted in lump sum per rig in **Form-A** (service charges) and day rate shall not be applicable.
  - ii. Schedule of these visits to be decided with mutual agreement between the contractor and concerned rig management. Payment to Contractor will be made for the actual visit as per agreed rate. A scheduled visit may be


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suspended by the concerned rig management due to any reason and will be intimated to the contractor in written form.

- iii. These visits are to be performed regardless of service calls from the rigs.
  - iv. The scheduled visit shall be at least for three days, working 12 hours per day.
  - v. During scheduled visit, the service engineers will inspect the listed equipment, check their maintenance and functioning and do the remedial jobs where deemed necessary or will recommend repair at workshop (if required). Moreover they will check the listed equipment spare parts availability on the rig and will notify the rig crew and Rig Maintenance head office if more critical parts have to be ordered.
- 3.20 In case of emergency, the call for service from any OGDCL rig will be in written form (fax, email or intimation through courier). Call for service shall have full details about the equipment and required service, at least including the following:
- i. Name and location of the rig
  - ii. Description of equipment
  - iii. Description of problem
  - iv. Description of service required
- 3.21 Contractor will also respond to such calls in written form immediately. If a problem requires rig visit, Contractor's service engineer will coordinate with the concerned rig management and the visit shall be planned clearly and all arrangements made accordingly. If, however, it is established that a problem cannot be solved at field/ rig location, contractor will clearly advise to send the defective equipment/ component to contractor's workshop for rectification.
- 3.22 Services by the contractor against service calls from OGDCL rigs shall normally commence within 48 hours of the service call. In case of an emergency, the contractor will have to mobilize the service engineer(s) the same day. In case both rigs (N-5 and N-6) call for service simultaneously, it will be the contractor's responsibility to arrange and mobilize service engineer(s) to both rigs separately.
- 3.23 An equipment/ component shall be repaired at field or at Contractor's workshop only after due satisfaction/ consent of concerned Rig Management. Contractor will provide the visit report after each field visit. Similarly the contractor will provide job report/ service report after completion of each service (inspection, maintenance, repair, up-gradation, installation, commissioning, calibration, configuration and/ or testing job etc.).
- 3.24 Visit reports/ service reports/ invoices/ requirement of parts/ quotation of parts should be submitted directly to operation manager of respective rig for verification and processing.
- 3.25 Transportation of OGDCL equipment and spare parts from rig to contractor's workshop, Islamabad and back will be responsibility of OGDCL.


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- 3.26 Crane/ lifting apparatus required at Contractor's facilities will be provided by the Contractor. Crane/ lifting apparatus required at OGDCL rigs/ locations will be provided by OGDCL.
- 3.27 Welding and cutting equipment/ services at rig site will be provided by OGDCL.
- 3.28 Skilled labor, if needed, for a particular job at rig site e.g. mechanic, welder, electrician and helper will be provided by OGDCL.
- 3.29 Installation, commissioning and testing of the listed equipment will be responsibility of the contractor and, if required, shall be completed without undue delay after completion of any repair/ maintenance job. In case of workshop repairs, payment for installation, commissioning and testing services provided at field will be made to the contractor for total number of actual days spent on the job calculated on the basis of agreed field service day rate.
- 3.30 Spares for a service job/ repair of an equipment/ assembly will be provided by OGDCL. In case the spares are not available with OGDCL, detailed quotation for the required spares will be submitted by contractor to operation manager of the respective rig and OGDCL will arrange procurement of the required spares.
- 3.31 OGDCL Rig Maintenance personnel, for their skill development, shall always be part of the repair and maintenance jobs under this contract. In addition, contractor's service engineer(s) will provide a brief training and hold an end of job discussion on the respective equipment to the available concerned OGDCL maintenance and operation personnel after each field/ workshop service with no additional cost, covering but not limited to the following:
- i. Working principle of the respective equipment/ component
  - ii. Nature of defect
  - iii. Method of rectification/ repair done
  - iv. Troubleshooting techniques
  - v. Critical maintenance spares.
  - vi. Recommendations for up-gradation (if any).
- 3.32 Contractor will submit original invoice(s) complete in all respects (with details of dates, equipment serial number, service provided, unit price and extended price as per agreed rates) along with time sheet and visit/ service report to respective rig operation manager for verification and processing for payment.
- 3.33 Rig Management will process the invoices for release of payment to the contractor without delay as per OGDCL payment procedure.

**Above terms of reference (TOR) are integral part of the tender enquiry and subsequent service contract. Bidder's authorized person must put his signatures and official seal on each page of the TOR/in token of acceptance of the contents.**

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**4. BID PRICE:**

- Bid price shall be inclusive of all taxes, duties, levies, charges etc., except Provincial Sales Tax (PST)/ Islamabad Capital Territory Sales Tax (ICT) in Pakistan. The prices should be quoted in PKR otherwise the bid will be rejected.
- The prices quoted by the successful bidder (contractor) for required services shall remain firm and final throughout contract period. The price charged by the successful bidder (contractor) for required services shall not vary from the prices quoted by the service company.

**(This clause will prevail instead of Master Tender document "ITB" clause # 06 'BID PRICE').**

**5- AMOUNT OF BID BOND:**

Bid Bond / Bid Security amounting to **PKR 756,000/-** is to be attached / provided with the technical bid. Please see Master Set of Tender Document for further details.

**Note:-**

The master set of tender documents (services) uploaded on OGDCL's website ([www.ogdcl.com](http://www.ogdcl.com)) is the integral part of this TOR.



**Service Charges.**

| S.No.   | Scope of Work  | Service Charges (PKR)                     |   |                            |
|---|--|---|---|----------------------------|
| <b>Maintenance &amp; Repair Services at Field/ Rig Location</b>           |  |   |   |                            |
|   | <b>Scheduled Visit</b>   | <b>Service Charges per Visit</b>          | <b>No. of Visits to Both Rigs per year</b>      | <b>Total Cost per year</b> |
| 1.1   | Scheduled field visit of three service engineers (rig electrical engineer/ chief rig electrician, top drive specialist and mechanical engineer/ chief rig mechanic) to OGDCL Rig as per Clause-3.19 of terms & conditions. |   | 6   |                            |
| <b>2.</b>   | <b>Emergency Visit</b>   | <b>Service Charges per Day per Person</b> | <b>No. of Visit Days for Both Rigs per year</b> | <b>Total Cost per year</b> |
| 2.1   | Emergency service by an engineer at field/ rig location against emergency service call   |   | 36  |                            |
| <b>Maintenance &amp; Repair Services at Contractor's Workshop</b>         |  |   |   |                            |
| <b>3.</b>   | <b>Nature of Service at Workshop</b>   | <b>Service Charges per Day</b>            | <b>No. of Days for Both Rigs per year</b>       | <b>Total Cost per year</b> |
| 3.1   | Maintenance, repair and rectification of the equipment in workshop as per scope of work.   |   | 20  |                            |
| <b>Total Cost of Maintenance &amp; Repair Services per Year</b>           |  |   |   |                            |
| <b>Total Cost of Maintenance &amp; Repair Services for Two (02) Years</b> |  |   |   |                            |

**Note:-**

Payment to the contractor shall be made as per actual number of visits and days against original invoices duly verified by the concerned Rig Management. All such invoices must be complete in all respects (with details of dates, equipment serial number, service provided, unit price and extended price as per agreed rates) along with time sheet and visit/ service report verified by concerned Rig Management.

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**OIL & GAS DEVELOPMENT COMPANY LTD.**  
**DRILLING OPERATIONS - RIG MAINTENANCE DEPARTMENT**

**Form-B**

**Technical Evaluation Criteria.**

In addition to comply all the instructions, general and special conditions of the tender enquiry, technical bids will be evaluated as per criteria given below. A bid will be straightaway rejected if found non-compliant to any of the following requirements.

| S.No. | OGDCL Requirement  | Bidder's Compliance (Yes/ No) |
|-------|--|-------------------------------|
| 1.    | At least ten (10) years of experience in repairing and overhauling of AC VFD oil & gas rig equipment.  |                               |
| 2.    | Company profile showing business history and experience provided with the technical bid.   |                               |
| 3.    | Workshop/ repair facility within Pakistan to undertake such repairs. Address of the workshop with detail of available facilities and workforce provided with the technical bid.  |                               |
| 4.    | Detail of clients and repair jobs carried out during the last ten (10) years provided with the technical bid.  |                               |
| 5.    | CVs of the Service engineers provided with the technical bid.  |                               |
| 6.    | Services provided under this contract shall have a standard warranty of the bidder/ contractor under normal operating conditions. Warranty statement on original letterhead of the bidding firm duly signed and stamped provided with the technical bid.     |                               |
| 7.    | Terms of reference (TORs) in "Annexure-A" are integral part of the tender enquiry and subsequent service contract. As a token of acceptance of the contents, the TORs duly signed and stamped by the bidding firm have been provided with the technical bid. |                               |
| 8.    | Service charges quoted as per "Form-A".  |                               |

  
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