OIL & GAS DEVELOPMENT COMPANY LIMITED
PROCUREMENT DEPARTMENT, ISLAMABAD
FOREIGN SECTION E

(To be completed, filled in, signed and stamped by the principal)

ANNEXURE 'A'

Material TRAILER MOUNTED COILED TUBING UNIT
Tender Enquiry No PROC-FE/CB/D-3102/2017
Due Date
Evaluation Criteria FULL

SCHEDULE OF REQUIREMENT

Sr No	Description	Unit	Quantity	Unit Price (FOB)	Total Price (FOB)	Unit Price C & F BY SEA	Total Price C & F BY SEA	Deviated From Tender Spec. If Any
1	1-1/2'' O.D COILED TUBING UNIT. DEATIL DESCRIPTION IS ATTACHED AT "ANNEXURE- A"	Number	1					

Note:

1) **TWO STAGE - TWO ENVELOPE BIDDING PROCEDURE** (PART-A OF THIS TENDER IS ATTACHED WITH SOR. FOR REMAINING TENDER CONDITIONS, 'MASTER SET OF TENDER DOCUMENTS FOR FOREIGN' IS AVAILABLE ON OGDCL WEBSITE.
2) **BID VALIDITY SHALL BE 150 DAYS.**
3) PURSUANT TO TENDER CLAUSE # 2.2, 11.4, 13 & 35.3.2, BID BOND AMOUNTING TO **US$ 42,000/-** (US DOLLAR FORTY TWO THOUSAND ONLY) OR EQUIVALENT TO PAK RUPEES MUST BE SUBMITTED WITH THE TECHNICAL BID AND **VALID FOR 180 DAYS** FROM THE DATE OF OPENING OF THE BID.
4) EVALUATION CRITERIA: **FULL CONSIGNMENT WISE (EXCEPT RECOMMENDED SPARES)** ON CFR KARACHI BASIS. **UNIT PRICE OF EACH RECOMMENDED SPARE TO BE QUOTED SEPARATELY IN THE FINANCIAL BID ONLY**.
5) **TERMS AND CONDITIONS:** BIDDERS ARE ADVISED TO CAREFULLY READ ALL THE TERMS AND CONDITIONS OF THE TENDER DOCUMENT AVAILABLE AT OGDCL WEBSITE IN THE MASTER TENDER DOCUMENT.
6) **SHIPMENT FROM ACU MEMBER COUNTRIES:** IN CASE OF SHIPMENT FROM ACU MEMBER COUNTRIES, THE LC BENEFICIARY SHOULD BE OF THAT PARTICULAR COUNTRY FROM WHERE THE CONSIGNMENT IS BEING SHIPPED.
7) **SUMMARY REJECTION CRITERIA:** THE SUMMARY REJECTION CRITERIA AT CLAUSE 35 OF THE TENDER DOCUMENT MAY ALSO BE EXAMINED CAREFULLY. ANY BID NOT MEETING THE CRITERIA SPELLED IN THE CLAUSE # 35 SHALL BE SUMMARILY REJECTED WITHOUT ANY RIGHT OF APPEAL.
8) **DELIVERY PERIOD:** THE LEAD TIME OF THE QUOTED PRODUCT SHOULD NOT BE MORE THAN **48 WEEKS** AFTER OPENING OF LETTER OF CREDIT (LC).
9) DETAIL TECHNICAL SPECS/T&Cs ATTACHED.

9/4/17.

PART-A

INVITATION TO BIDS FOR
CASE NO. PROC-FA/CB/D-3102/2017

OIL & GAS DEVELOPMENT COMPANY LIMITED
SUPPLY CHAIN MANAGEMENT DEPARTMENT
(FOREIGN WING)

SUBJECT: INVITATION FOR BID FOR THE PROCUREMENT OF TRAILER MOUNTED COILED TUBING UNIT

UNDER CASH FOREIGN EXCHANGE / OWN RESOURCE.

1. Sealed bids in duplicate are hereby invited under Competitive Bidding (CB) procedure from eligible bidders from the countries maintaining bilateral trade relations with Pakistan for the items as listed in the Schedule of requirement "Annexure-A" of the attached Tender Documents. Only the bids of bonafide buyers of tender documents will be entertained. **The prices may be quoted on both FOB and CFR Karachi basis.**

2. **PROSPECTIVE BIDDERS SHOULD PARTICULARLY NOTE THAT:**

   2.1 Bids will be accepted only if the materials and supplies being offered are produced and manufactured in the country(s) maintaining bilateral relations with Pakistan.

   2.2 Each bid valid for minimum **150 Days** from the date of opening of the bids must be accompanied by a Bid Bond in the form of a cash deposit, a Bank Draft or a Bank Guarantee issued by scheduled Bank of Pakistan or a branch of foreign bank operating in Pakistan and valid for **180 days** from the date of opening of bids. The Bank Guarantee will be issued by a scheduled Bank in accordance with the format as per Annexure-C of the tender Documents.

   2.3 Bid Bond through telex / fax shall not be acceptable.

   2.4 On acceptance of the bid by the Purchaser the successful bidder shall be required to furnish Performance Bond / Bank Guarantee for an amount equivalent to 10 % of the order value of the contract for the required material in US Dollars or in currency of Bidder or equivalent in Pakistan Currency as per Annexure-D.

3. The Purchaser does not take any responsibility for collecting the bids from any Agency. Your authorized representative may attend the Tender opening if desired. The request for extension of closing date and time shall not be entertained and tender received after closing time or date shall be returned to Bidder unopened.

4. The Purchaser reserves the right to increase or decrease the quantities and accept or reject any or all bids or cancel any or all items at anytime without assigning any reasons thereof.

5. The Purchaser reserves the right to have the items inspected by its own representatives or through third party.

6. It must be indicated in the offer that the quotation fully conforms to Technical Specifications and Terms & Conditions of the Tender Enquiry.

7. OGDCL reserves the right to evaluate the bids either on item wise or full group basis without assigning any reason. Tenderers are advised to quote competitive price for all or any items, enabling OGDCL to decide the purchase.

4/X/17

MUHAMMAD AHMED
Sr. Engineer (Stimulation)
Ext: 2334

Dy Chief

8. **TIME AND PLACE FOR SUBMISSION OF BIDS.**

Bids must be delivered / dropped in the tender box until _____ hours Pakistan Standard Time (PST) on _____ at the following address:-

Oil & Gas Development Company Limited
Supply Chain Management Department
OGDCL House, Plot No. 3 (New No 3013) F-6/G-6,
Jinnah Avenue, Islamabad (Pakistan)
Phone No. 92-51-92002 2144

9. **OPENING OF BIDS**

Bids will be opened at _____ (PST) on _____ at the place noted above.

10. **The Offshore companies registered at places e.g. Vigin, Cayman, Nausa, Jersy and Bohaman Islands shall not be entertained and bids if submitted shall be rejected.**

11. **TWO STAGE TWO ENVELOPE BIDDINGS**

11.1 First Stage

i. Bids against this tender are invited on **Two Stage Two Envelope Bidding Procedure**, therefore the bid shall comprise a single package containing two separate envelopes. Each envelope shall contain separately the financial proposal and the technical proposal;

ii. The envelopes shall be marked as "FINANCIAL PROPOSAL" and "TECHNICAL PROPOSAL" in bold and legible letters to avoid confusion; the bidders shall submit one original and one copy of their Technical bid along with indication on the envelopes as "ORIGINAL" and "COPY", whereas the financial bid is required in original only. No copy is required for financial bid.

iii. Tender Annexure to be added in both the bids; UN-PRICED with Technical Bids & Priced with commercial Bids.

iv. Initially, only the envelope marked "TECHNICAL PROPOSAL" shall be opened;

v. the envelope marked as "FINANCIAL PROPOSAL" shall be retained in the custody of OGDCL without being opened;

vi. The technical proposal shall be discussed with the bidders with reference to the OGDCL's technical requirements;

vii. Those bidders willing to meet the requirements of OGDCL shall be allowed to revise their technical proposals following these discussions;

viii. Bidders not willing to conform their technical proposal to the revised requirements of OGDCL shall be allowed to withdraw their respective bids without forfeiture of their bid security;

4/x/17.

MUHAMMAD AHMED
Sr Engineer (Stimulation)
Ext: 2334

Dy. Chief

11.2 Second stage

i. After agreement between OGDCL and the Bidders on the technical requirements, bidders who are willing to conform to the revised technical specifications and whose bids have not already been rejected shall submit a revised technical proposal and supplementary financial proposal, according to the technical requirement;

ii. The revised technical proposal along with the original financial proposal and supplementary financial proposal shall be opened at a date, time and venue announced in advance by OGDCL

iii. OGDCL shall evaluate the whole proposal in accordance with the evaluation criteria and the bid found to be the lowest evaluated bid shall be accepted.

11.3 Amount of bid bond of this tender shall be **US$ 42,000/-** (US Dollar Forty Two Thousand only) and bid bond validity shall be **180 Days** which **should be placed along with Technical Bid.**

10/8/17

(IRSHAD MUHAMMAD)
MANAGER (SCM) FOREIGN
OIL & GAS DEVELOPMENT COMPANY LIMITED
PHONE: 0092-51-92002 2144
EMAIL: irshad_muhammad@ogdcl.com

NOTE:
For remaining Tender Conditions, please see the 'Complete Set of Master Tender Documents for Foreign' available on OGDCL Website.

4/8/17.

MUHAMMAD AHMED
Sr. Engineer (Stimulation)
Ext: 2334

TABLE OF CONTENTS

1. Description

The trailer mounted Coiled Tubing Unit (CTU) should be capable of providing Nitrogen Kick off, Acid treatment, through tubing Scale removal, Milling, Drilling, Cutting, Fishing and Specialized Well Intervention jobs of Oil and Gas wells.

All components and systems should be assembled in a manner to provide easy access for maintenance. The complete unit should be suitable for Stimulation operations along with mobilization both on and off road condition through all Oil & Gas fields in Pakistan. The CTU is designed to operate in a wide range of ambient conditions (-5°C to 55°C). Especially hot weather environment.

2. Trailer

The trailer should be equipped with a heavy-duty fifth wheel JOST (or equivalent) for quick coupling with the prime mover. The trailer should have the following detailed specifications.

- Road clearance must be 15 inch at least
- Maximum Height should be 16 feet (with load),Width 8.6 feet (Total length with truck/prime mover should not exceed 55 feet)
- Adequate excels to bear the entire load with Tires Michelin (or equivalent) (size: 12.00 x 20) and should have adequate clearance from the trailer deck.
- 3-1/2" SAE King Pin JOST (or equivalent) with rub plates
- JOST (or equivalent) support legs.
- Two speed manually operated landing gear at the front of the Trailer
- Hydraulic tilt over mount for injector at rear of trailer to allow tubing to remain stabbed. The two front mounting pins are long to enable easy mounting. An injector rest is mounted on the trailer deck.
- Mud flaps will be located behind rear tires

3. Control Cabin

- Hydraulic (Cross jacks) Cabin lift should be adequate for better view of the Well head.
- Roof height of a cabin must be minimum 6.5 feet
- Bullet proof Safety Glass window should be installed at the front side of cabin
- Wind shield wiper should be air driven for maximum flexibility.
- "L" shaped control panel configuration provides superior control and monitoring access.

- Height adjustable Captain Chair for the operator and four seated bench for other personnel at rear side.
- Electrical wires should be properly installed/insulated along with dual purpose air conditioner (Heat and cool 1.5 ton capacity).
- 04 Internal lights, 04 adjustable exterior flood/Spot lights and Air horn along with separate switches to be connected with a separate generator power supply as well.
- Control cabin is properly insulated to reduce exterior noise level and cooling demand.
- Entrance doors along with glass window should be both sides of the Cabin along with ladder and hand railings for easy walk around.

3.1 Control Panel

It must be incorporated with the following controls

- Injector Control
- Reel Control
- Dual stripper packer Control
- BOP Control
- Auxiliary shear seal Control
- Hydraulic circuit pressure gauges
- Weight indicator
- Tubing internal pressure
- Well Head Pressure
- Data acquisition Unit
- Remote Power pack control
- Blind and Shear Ram controls on the panel should have positive locks

4. Power Pack Skid

The power pack should have minimum Caterpillar C15 ACERT rated 440BHP to 595BHP @ 1800-2100RPM including engine diagnostic computer. The power pack is skid mounted along with four point lift protective frame.

- Electronic throttle for speed control.
- Electronic data link.
- Oil pressure, water temperature, air pressure and engine tachometer gauges.
- Engine should contain an emergency shutdown system for high temperature, loss of oil pressure, loss of coolant along with over speed protection system.

- The air systems should include an air dryer to handle ambient humidity up to 100% (-5 to 55C)
- Diesel lubricated air starter and a 30 gallon or higher air reservoir for starting. The reservoir should have a water drain in addition to a dryer for air controls.
- The 30 gallon air reservoir supplies system air through a filter and regulator should be provided.
- CAT 12 CFM air compressor for charging the air reservoir and operating the air controls.
- Heavy duty radiator for extreme weather i.e. 55C during operations.
- Circuits for injector drive, reel drive, level wind over ride, BOP and control cabin supply should be provided.
- (04) 15 gallon accumulator should be provided for BOP, Stripper and house backup.
- Pressure compensated pump mounted to the engine's gearbox for tubing reel power, level wind override, injector chain tension & traction, level wind lift cylinder, hose reel supplies, control cabin lift cylinders, auxiliary, and stripper controls.
- Auxiliary pump mounted to engine's gearbox dedicated to close loop flushing.
- Additional pump dedicated to BOP functions mounts to flushing pump.
- Pumps have compensator dump valves for start-up at no load.
- Denison P16 or equivalent Positive displacement hydraulic piston pump with power rating 6000psi should be provided.
- An air to oil heat exchanger is mounted on the front of the engine radiator; with rubber lined pads and heat exchanger sized for 55C ambient.
- Capacity for 120 gallons of diesel fuel Tank (Material of construction is Carbon steel) along with level indicator, fuel shutoff valve, fuel drain and locking arrangement.
- Ball valves must be installed between all tanks or reservoirs and filters to facilitate easy filter changes.
- Hydraulic reservoir (Material of construction is Carbon steel) with a capacity of 200gallons. Suction strainers and return fluid filtering with pump visual filter change indicators. Reservoir has a removable cleanout cover and drain. All outlets have shutoff valves. Reservoir is equipped with a sight level gauge, temperature gauge and breathable filling cap.

COILED TUBING UNIT

- A nitrogen bottle with regulator should be mounted on the power pack for emergency air supply for engine start.
- A 24V DC alternator and battery system should be provided for the engine electronics. The battery is enclosed in a battery box located on the driver's side of the power pack.
- A ladder along with hand rails should be provided for an easy access of filling oil and inspection purpose.

5. Coiled Tubing Reel Skid along with 1.5// Tubing

The reel drum should be skid mounted along with four point lift crash protective frame both for drum and CT string.

Reel Skid equipped with the followings:

- Reel drum design for a capacity of O.D1.5 // Tubing along with 21,325ft (6500meter) length
- Reel drum should be double recessed reel drum design with continuous concave core to shaft structure. Flanges have expanded metal panels. Reel drum is locked in position by means of chains and binders with eight locking positions around the circumference of the flange and the Free board should be minimum of 2.0 inch
- Reel drive and brake system (Gear Operated)
- Reel drive and line tensioning system with planetary direct drive with internal brake. System capable of spooling tubing at 2,500 psi hydraulic pressure or less. Motor case drain and brake protected by pop-off relief vales. Cross line relief valves in motor.
- Diamond lead screw level wind system with mechanical drive and remotely operated hydraulic override. Level wind is dual-bar cross track design, hydraulically raised to working position with counter balance valve to maintain elevation.
- Tubing counter with vertical slide mount to compensate for tubing pay-off angle. Counter reads in meters and is sized for 1.5" tubing. Mechanical counter is positive drive each direction with 1" numbers. An encoder supplied with the data acquisition system is connected to the counter assembly for redundant monitoring of tubing depth and speed.
- 15,000 psi circulating swivel, 1.4// bore, suitable for H_2S service. Flange mounted with compression face seal.

- H_2S service external plumbing manifold using integral 1502 type fittings rated at 15,000 psi. Dual inlet connections on passenger side with 2 x 2 plug valves between swivel and inlets. Vendor product certificates are supplied with the operator manual. Fig 1502 pressure de-booster should be provided to monitor circulating pressure.

- H_2S service internal plumbing manifold using integral 1502 type fittings rated at 15,000 psi. Single tee for ball launching. 2x2 shutoff valve provided for swivel isolation. Vendor product certificates should be supplied with the operator manual.

- Hinged counters for easy removal and installation of tubing

- Core diameter should not be less than 72//

- All chains have removable protective guards. Level wind chain guard has hinged cover for quick change out of sprockets and clutch adjustment.

- Grease fitting bulkhead panel. Chains unpainted and greased prior to shipment.

- Hydraulic and grease lines use standard climate rated hoses.

- Coupling panel with Aeroquip qd's or (equivalent) and plastic caps and plugs.

- Headache rack on back of reel skid to protect cabin.

- Tie downs for tubing reel to be comprised of chains/binders.

- 1.5" level wind sprocket provided, shipped loose.

- Tube oilers mounted directly to the reel trolley (Lubrication Applicator)

- Option for open and closed loop hydraulic system

5.1. Tubing should have the following stipulations

QT-800 or equivalent tapered tubing must be provided that meets manufacturing criteria of API RP 5C7

- O.D1.5 // Tubing along with 21,325ft (6500meter) length

- Wall thickness must be 0.156//

- Internal Yield pressure must be 16,000 Psi

- Tensile Load must be 60,000 Lbs.

- Tapered string (Major wall thickness changes should be avoided)

6. Coiled Tubing Injector Head

80,000 Lbs. Injector Head is required for CTU along with the following requirements:

- The injector drive consists of dual planetary gear transmissions with deep reduction ratios. Both drive assemblies have a single input, brake, and output sprocket.
- The drive sprockets are one piece for precise alignment and strength.
- The injector is powered by dual high speed / high-pressure swash plate variable displacement piston motors.
- Modular brakes are mounted between the motors and gearboxes and are spring applied / pressure released. The brake control system is automatic / manual set for fail safe operation.
- Injector supplied with the patented "quick connect" chain assembly capable of running grippers for 1-1/4", 1-1/2", 1-3/4", 2" tubing sizes. Injector is supplied with 1-1/2" grippers and R-type chain should be provided for gripper block.
- Injector incorporates 200-pitch heavy duty roller chain links with precision cast "quick connect" carriers. The tubing grippers are a grooved and hardened, single piece, half round configuration, elastomerically balanced for optimum tubing grip. Each of the carriers is supported by dual, sealed for life, heavy duty bearings.
- Guide Arch system (Min Arch radius 72 inches as per API for 1.5// Tubing)
- Chain loop tension is provided by down tensioning with hydraulic cylinders. The system is remote controlled from operator's cabin.
- Tubing traction system incorporates three (3) independent sets of two (2) rod type hydraulic cylinders. Tubing traction is applied to the chain system through a pair of single piece reversible, thru hardened and ground steel skates. The skate system is designed for self-centering for uniform gripper and tubing loading. The traction system is remote controlled from the operator's console.
- Injector chain lube system is a pressure spray system with the tank and pump mounted on the injector.
- Two (2) single acting hydraulic loads cell provide direct pipe heavy / pipe light weight indication.
- Complete injector assembly mounted on steel base. Coupling panel installed at bottom front of injector.
- Outer lifting/crash frame has 4-point sling attachment points and is rated for 95,000 lbs operational lifting capacity. The standard 29,000 lb. shipping 4-leg sling assembly is provided. This sling assembly is for lifting the injector during shipment and well site installation only and is not capable of full injector load capacity.

- Auto gear system must be provided for Coiled tubing RIH and POOH
- Snubbing Capacity (Push Capacity) 40,000 lb
- Max Speed should be 240 ft /min
- Max. Working Pressure 5000 psi
- Traction Cylinder Accumulator 350 psi N2 Pre-charge / 0.95 liter
- Outside Tension Cylinder Accumulator 110 psi N2 Pre-charge / 0.95 liter
- Scaffolding for fall protection along with injector's long legs aluminum telescopic.
- The injector must have a guide arc between chain and stripper.
- A Depth oddo meter must be placed on the motor of injector to calculate / access the life and cumulative running of injector/ reel.

7. Pressure control Equipment

7.1 Primary Barrier (Dual Stripper)

- 4.06// side door stripper for H_2S service, dress 1.5// Stripper mounts to injector via pin-on adapter.
- Minimum Working Pressure should be 10,000Psi and the Test pressure must be 15,000Psi.
- Must follow NACE MR0175 & API Standards
- Accumulator should be sized to operate all rams one and a half cycle (close, open, close) at a maximum rated BOP working Pressure

7.2 Secondary Barrier (Quad BOP)

4.06// size, H_2S service quad BOP with Blind, Shear, Slip and Pipe rams along with the following requirements:

- Working Pressure 10,000Psi, dressed 1.5//
- Upper and lower flange (BX 155) and side port with adapter
- Pressure port
- Equalizing valves
- Kill port
- Pressure de-booster should be provided to monitor wellhead pressure

7.3 Dual Combi BOP

- Working Pressure 10,000Psi, dressed 1.5″
- H_2S Resistant
- Nominal size 4.06″
- Upper and lower flange (BX 155) and side port with adapter
- Bop stack is secured in a removable stand affixed to the trailer via pins. The stripper will stay mounted to injector on the CTU trailer

Important Note

- All BOPs must be total fire proofed.
- All rams must be able to close in 15seconds or less at minimum temperature
- Shear ram should be capable of shearing the heaviest wall and highest yield OD pipe
- Two or more successive cuts of the above pipe while still leaving a fishable profile plus flow path through the pipe
- Shear rams must be capable of cutting slick or bridle line clearly.
- For ease in Rig up/Rig down; the BOP and Injector hoses should be on a spooler separately, hydraulically operated from trailer deck.

7.3.1 Lubricators/Risers

4.06" Lubricators/Risers at least 30feet cumulative (different size combinations) are required. These are to be arranged and placed on unit securely for ease in unit mobilization.

7.3.2 Cross over adapter flanges

These are required for 2-7/8″, 3-1/2″, 4-1/16″ 5-1/8″,and 7-1/16″ both for 5K and 10K size completions w.r.t. 4.06″size BOP.
It must contain a flow-"T"

8. Genset Skid

- 10kw water cooled, diesel Genset
- Genset is mounted in separate skid with built in fuel tank and battery. Fuel tank sized for minimum of 24-hr runtime at half load
- Skid to have outer protective frame, and one lift eye for transport
- One (1) 200' power cord to run from Genset to cabin. Cord will be stored on top of the Genset skid when not in use
- Output- 230VAC 50HZ single phase

9. Digital Data Acquisition System

- CTES Orion or (equivalent) data acquisition system complete with monitoring software, CT modeling software, Orionnet or (equivalent), and laptop computer with printer. Supplied fitted to the control cabin of the CTU. 220V/50HZ input requirement.
- Orion CT data acquisition software for real time measurement and display of coiled tubing operations.
- Tubing weight is monitored via injector's hydraulic load cells.
- Tubing depth and speed are monitored via an encoder mounted to the tubing reel counter.
- Redundant tubing depth and speed are monitored via an encoder mounted to the injector counter.
- Wellhead pressure is monitored via a pressure de-booster mounted to the BOP.
- Circulating pressure is monitored via a pressure de-booster mounted to the tubing reel inlet plumbing manifold.
- Digital encoders- quadrature for CT depth and speed located on injector counter and tubing reel counter.
- Appropriate cabling and cable reels for above.
- Proximity switch for remote fluid and N_2 rates
- Cerberus software or (equivalent) for Coil Life, Pipe limit, Tube Reel Ovality, fatigue tracking, down hole forces, and hydraulics (two copies)
- An integrated suite of windows applications allowing the user to design, model and perform coiled tubing (CT) operations.

- The software makes extensive use of "wizards" to help inexperienced users enter and analyze job design data in an efficient and effective manner. Cerberus perform; Coil Life monitoring and modeling of down hole forces and hydraulics along with job reporting.

9.1 Simulators

These should be executed a CT job in software and updates the working (fatigue) life of the string according to the local geometry and sequence of depths and pressures in the job log.

10. Prime mover

The prime mover consists of the following specifications:

- Flat face.
- Fuller transmission (manual transmission)
- Ken worth Prime mover preferably or Equivalent
- Adequate excels for entire trailer load bearing
- Caterpillar or Equivalent Road Engine having suitable power to pull the entire trailer load on hilly areas of KPK and Baluchistan.
- AC/Heater
- Power windows
- Driver seat height adjuster
- Air Bags.
- ABS/EBD
- Power Steering
- At least 120 Gallons Carbon Steel Fuel Tank
- Wind shield Wipers

11. Unitization and Completion

The unit should be fully assembled ready for unitization and completed to the specifications of the customer. This shall include the following items (if these items are already detailed above, they shall not be duplicated).

- Risers pipe and fittings racks.
- Fittings basket and tool box.
- Installation of lights for 24 hour use.
- Installation of all other electrical systems.
- Installation of all pneumatic systems.
- Installation of all hydraulic/lubrication systems.
- All oils, coolants and other operating fluids.
- All steel and misc. fittings to complete the unit.

- All labor to complete the unit.
- Spare tire along with carrier assembly and suitable hydraulic jack.
- General workmanship should be of good quality and appearance.
- Unit packed and prepared for under deck sea shipment.
- Unit should be painted with OGDCL monogram which is attached at Annexure 'I'.
- Complete unit prepped, primed and painted to Post office Red and control cabin should have white in color.
- Complete unit assembled and tested for customer acceptance at OEM facility. OEM would notify the purchaser at least two (2) weeks prior to customer acceptance testing.
- Four (4) owner's manuals in English and CD's are supplied with unit. Manuals include operating instructions, assembly breakdowns with service part numbers, maintenance procedures, spares part number, Drawings, sling test certificates, certifications of injector pull test, and completed function test procedures.
- Sharp edges must be avoided
- Spooler along with A-frame and spare spool should be provided also hydraulic hoses for a-frame
- All tyres of the units preferably be of the same size.

12. Codes and Standards

The following certificates should be provided, for the equipment/parts which require said certification, from authorized inspectors.

a) ASME
b) NACE MR 0175
c) API

13. Tools

Following Tools (Snapar, Facom or Proto with life time guarantee) should be provided with the unit.

S.NO	DESCRIPTION	QTY
13.1	Heavy duty socket set with extension rods and adopters.	01 SET
13.2	Open end spanner set ranging 10-75 mm set.	01 SET
13.3	Ring spanner set ranging from 5/16"-2" with kit bag.	01 SET
13.4	Screw driver set consisting of (+) and (-) assorted sizes.	01 SET
13.5	Cutting pliers.	01 NO.
13.6	Adjustable joint pliers.	01 NO.

13.7	Needle nose pliers.	01 NO.
13.8	Vise-grip pliers.	01 NO.
13.9	Ball pin and claw hammer with suitable weight.	01 NO.
13.10	Engineering style hammer set including sledge hammer.	01 NO.
13.11	Punches.	01 SET
13.12	Chisels.	01 SET
13.13	Puller set multiple size for replacing bearings etc.	01 SET
13.14	Torque wrench up to 1-1/2" square drive with gauge reading dial and follow up pointer, with extension hand t-bar & torque adopters up to 2000 lbs-ft. Torque.	01 NO.
13.15	24" pipe wrench heavy duty Aluminum.	02 NOS.
13.16	36" pipe wrench heavy duty Aluminum.	02 NOS.
13.17	High pressure bucket type grease gun with assorted adopters.	01 NO.
13.18	Low pressure grease gun	01 NO.
13.19	20 m ton capacity trailer hydraulic jack.	01 NO.
13.20	Tool box for storage of trailer and other special tools	01 NO.
13.21	Water gun along with Pump for Unit Cleaning 3 in 1. (steam, diesel, chemical)	01 NO.

14. Spares

- A list of necessary spares for maintenance of unit for a period of 02 years is mentioned below. However the bidder can include additional spares if he deemed necessary.

S.NO	DESCRIPTION	QTY
1	Mud Flaps for trailer and Prime mover	01 Set
2	Wind shield wiper for Prime mover and Control cabin	01 Set
3	Oil pressure, water temperature, air pressure and engine tachometer gauges for Power Pack	01 No Each
4	All Air and Oil Filters for Power Pack	02 Set
5	Seals and O rings of Pressure compensated pump for Power Pack (See details in TOR under heading Power Pack)	02 Set
6	Seals and O rings of Auxiliary pump for Power Pack (See details in TOR under heading Power Pack)	02 Set
7	Seals and O rings of Additional pump for Power Pack (See details in TOR under heading Power Pack)	02 Set
8	Seals and O rings of Piston pump for Power Pack (See details in TOR under heading Power Pack)	02 Set

9	Ball valves for filter change (See details in TOR under heading Power Pack)	02 No. For Each Assy.
10	Air filter for Compressor (See details in TOR under heading Power Pack)	06 No.
11	Pressure relief valve and check valve for compressor(See details in TOR under heading Power Pack)	02 No. Each
12	Sight level gauge, temperature gauge and breathable filling cap for Hydraulic Reservoir (See details in TOR under heading Power Pack)	02 No. Each
13	Strainer for Hydraulic Reservoir (See details in TOR under heading Power Pack)	02 No.
14	Filter for Hydraulic Reservoir (See details in TOR under heading Power Pack)	02 No.
15	Tubing Reel drive system, Planetary Gear Drive complete with 02Nos. Redress kits (See details in TOR under heading Coiled Tubing reel Skid)	01 Set
16	Mechanical Depth counter (See details in TOR under heading Coiled Tubing reel Skid)	01 No.
17	Level Wind travelling head (See details in TOR under heading Coiled Tubing reel Skid)	01 No.
18	Swivel joint with 02 Nos. redress kits (See details in TOR under heading Coiled Tubing reel Skid)	01 Set.
19	Chain Assembly for Injector head (See details in TOR under heading Coiled Tubing Injector Head)	01 Set
20	Pressure needle valve and Bleed needle valve for Tensioner piston in Injector head (See details in TOR under heading Coiled Tubing Injector Head)	01 No. each
21	Gripper Block for 1-1/2// Tubing (See details in TOR under heading Coiled Tubing Injector Head)	01 Complete set
22	Retainer, clip pins, non-extrusion ring, Stripper Rubber, Energizer and lower bushing for 1-1/2// Tubing (See details in TOR under heading Primary Barrier).	06 No. Each
23	Goose Neck roller bearing	01 Complete Set
24	Spare Hydraulic hoses for BOP, Injector Head	01 No. Each
25	Redress Kits for Quad and Combi BOPs	02 No. Each
26	Prime Mover Spares including brake discs and Filters	01 Set Each

Note

The quantity of spares can be reduced or increased according to the OGDCL requirement. Bidders are advised (In their own interest) to quote 100% true spares on basis of consumption. Cost of spares should not exceed 20% of the main equipment cost. Separate cost to be mentioned for spares.

15. Facility visit during technical evaluation (FAT)

OEM facility visit is the integral part of Technical Evaluation for this purpose 02 Nos. OGDCL Officials must visit the facility of qualified bidder at bidder's expense.

16. Inspection

OGDCL Engineer along with Third Party Inspection (TPI) will be arranged by OGDCL at manufacturer facility prior to shipment of Unit. Bidder will show their willingness for TPI only.

TPI Company will inspect/confirm the followings:

- All the Technical specs/requirements have been met mentioned in the Specs at F/C.
- Confirm that all the items are brand new and free from defect.
- Confirm that the Items arranged from other manufacturers are genuine and will check item serial numbers with OEM.
- Any other quality inspection, including inspection plan/drawings required for this project.

Final report will cover all the aspects detailed above and has to be submitted before the delivery of Equipment.

17. Commissioning of Unit in Pakistan

- Commissioning of the unit in Pakistan will be the part of evaluation and Bidder will bear the cost for Commissioning.
- Commissioning period should be at least 02 weeks. During Commissioning, the cost of any failure/breakdown of Coiled tubing Unit will be borne by the bidder.
- A certified OEM service engineer would be deputed to OGDCL facility upon arrival of the equipment. The engineer will inventory all equipment, ensure successful startup of the equipment, and perform at least one test run job to ensure the equipment is in proper working order.
- OEM /Supplier is responsible for airfare and lodging upon arrival in Pakistan.
- OGDCL is responsible for local ground transportation, boarding and lodging of the OEM/Supplier service engineer at Field/Base.
- Upon completion of successful commissioning, a document will be signed by both parties.

18. Training

02 weeks of training should be provided at OGDCL facility during commissioning for up to 10 Nos. OGDCL engineers. Activities include Unit hydraulics overview, training on CTU maintenance, Digital Data Acquisition system and basic coiled tubing control functions along with 01 No. actual CTU job perform, supportive Data, Training manuals, Software of Digital Data Acquisition System. 04 No. manuals (Hard form) in English containing maintenance, Spares, Equipment drawings etc. along with soft copy.

19. Warranty

OEM will repair, replace or rectify any of the supplied goods (or any replacement) which are defective. The warranty period will be twelve (12) months from the date of commissioning in Pakistan.

20. Terms and Conditions

- Supplier should provide the O.E.M. (Original Equipment Manufacturer) Certification of all major parts of the Coiled Tubing Unit.
- Supplier will warrant that all goods supplied against the contract should be new and have no defect arising from design materials and manufacture and that the **supplier should rectify any defect at no cost for a period of one year** under normal use of supplied goods and conditions prevailing after commissioning in Pakistan.
- Supplier should provide the drawings, specifications and dimensions of the equipment mounted on CTU.
- The bid to be submitted through two stages two envelops.
- The manufacturing company must have supplied at least 50 (Fifty) Coiled Tubing Units along with 25 years manufacturing experience of the Units (Equal or less than 15 years of experience will be disqualified). The bidder should provide the list with names, address and fax number of clients and OGDCL have the right to contact these clients directly to know the performance.
- Performance certificates in original from 05 E & P companies of international repute (from other than the manufacturer's country) has to be submitted with the Technical bid, otherwise the bid will be stand rejected.
- Evaluation will be done on package bases except spares.
- Maximum **delivery period** of the unit is 48 weeks.
- For Quality control the O.E.M should be ISO certified.
- Supplier will clearly mention the differences of specifications if any, with OGDCL specification.
- Audited financial accounts for last three years to be submitted with the technical bid.

MUHAMMAD AHMED
Dy. Chief Engineer (Stimulation)
Ext: 2334

ANNEXURE II

Evaluation for Technical Bids:

S/N	Description	Max. Score
01	25 years manufacturing experience. (Equal or less than 15 years of experience will be disqualified)	25
02	Supplied at least 50 similar Coiled Tubing Units (CTU) to the clients.	10
03	Performance certificates from E & P Companies. (at least 05)	15
04	Regional Backup support in terms of Service engineer and Spares availability for Pakistan.	15
05	OEM facility visit of 02 Nos. OGDCL Officials of qualified bidder at bidder's expense.	15
06	ASME, API, NACE, ISO and OSHA certifications	10
07	Commissioning in Pakistan along with 01 year Warranty after commissioning of Unit.	10
	Total	**100**

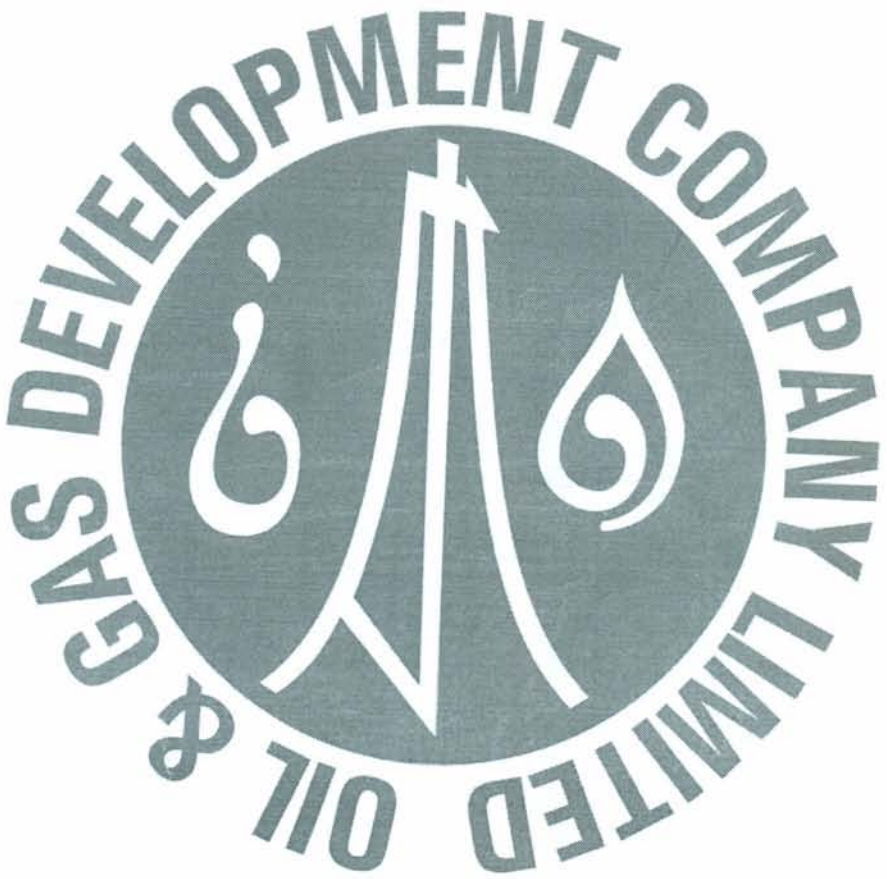
Note:

All the points at Sr. No. 1-7 will be addressed mandatory and for technical qualification, participating bidder's score less than **80%** marks will be disqualified.

4/X/D

MUHAMMAD AHMED
Sr. Engineer (Stimulation)
Ext: 2334

Dy. Chief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