

BIDDING DOCUMENT
FOR the HATCH BARGE VALIDATION/VERIFICATION
(Bid Ref No. Secy/PPC/BRC/04)



Inland Water Transport Development Company (IWTDC)
No. 34-A, Street 27, Valley Road, Westridge, Rawalpindi
Ph # 051-5491494-95, www.iwt.punjab.gov.pk



**INLAND WATER TRANSPORT
DEVELOPMENT COMPANY**



19 May 2015

Invitation for Bids/Quotations
FOR the Hatch Barge Validation/Verification
(Bid Ref No. Secy/PPC/BRC/04)

A. Inland Water Transport Development Company (IWTDC) has been established by Government of the Punjab and formally registered under Section 42 of Companies Ordinance 1984 in Aug 2014.

B. IWTDC invites sealed quotations/proposals for the **Hatch Barge Validation/Verification**, required on the basis of following criteria in addition to the provisions as laid down by Section 254 of Companies Ordinance 1984.

- i. Company Profile
- ii. NTN/ Registration
- iii. Experience (especially with Public Sector Companies/Autonomous Bodies)
- iv. International Affiliations
- v. Number of Project
- vi. Last Three Years Audited Financial Statements
- vii. Location of Offices
- viii. Undertaking that the firm/company is not blacklisted by any of Provincial or Federal Government Department, Agency, Organization or autonomous body or Private Sector Organization anywhere in Pakistan

C. Interested bidders may inspect the bidding documents at the address of IWTDC between **0900 Hrs to 1700 Hrs** or may download bidding documents from IWTDC (www.iwt.punjab.gov.pk) and PPRA (www.ppra.punjab.gov.pk) websites. The procurement shall be completed in accordance with Punjab Procurement Rules 2014.

D. A **single package containing Firm Profile, Evaluation & Financial Bids sealed in separate envelopes**, duly signed, stamped, sealed and in complete conformity with bidding document should reach IWTDC office Rawalpindi, on or before **1100 Hours on 4 June, 2015**. Bids will be opened at **1200 Hours on the same day** in the presence of bidders' representatives who choose to attend, at **IWTDC Office**. Late tenders/bids will be rejected and returned unopened to bidders.

E. **02%** of the financial bid as **earnest money** to be submitted in favor of Inland Water Transport Development Company as Call Deposit/Demand Draft/Pay Order. Bidders are required to submit **Rs. 1,000/-** as **tender fee** along with their bids in favor of IWTDC through

Pay Order/Demand Draft.

F. In case the bid opening date is declared a public holiday then the bids will be received and opened on the next working day or as notified.

G. Bidders must ensure that all the required documents indicated in the Bidding Documents are submitted with the bid without fail. Incomplete bids or bids received without, undertakings, valid documentary evidence, supporting documents or are not sealed, signed or stamped, late or submitted by other than specified mode will not be considered.

H. Income tax registration certificate and other documents as mentioned in bidding documents must accompany the bids. Taxes will be deducted as per Government of Pakistan and Government of the Punjab rules at source.

I. There will be no price negotiations with the lowest evaluated responsive bidder. Bidders are, therefore requested to submit their lowest and best prices with their bids.

Note: IWTDC may reject all bids or proposals at any time prior to the acceptance of a bid or proposal, as provided under Punjab Procurement Rules, 2014.

Chief Executive Officer

Inland Water Transport Development Company
No. 34-A, Street 27, Valley Road, Westridge, Rawalpindi
Tel: 051-5491495 Fax: 051-2651153

1. Invitation to Bid

1.1 PPRA Rules to be followed

This Bidding Process will be governed under Punjab Procurement Rules, 2014, as amended from time to time and instructions of the Government of the Punjab received during the completion of the process. PPRA Rules 2014 may be obtained from PPRA's website <http://www.ppra.punjab.gov.pk>. Moreover, in this document, unless otherwise mentioned to the contrary, "Rule" means a Rule under the Punjab Procurement Rules, 2014.

2. Bidding Details (Instructions to Bidders)

2.1. The complete bids as per required under this tender document, must be delivered to the **IWTDC OFFICE on or before 1100 hrs on 04 June, 2015**. The **evaluation bids** shall be publicly opened in IWTDC Office, **at 1200 hrs on the same day, whereas Financial Bid of successful bidder will be opened in due time and will be intimated to the bidders**. In case the last date of bid submission falls in / within the official holidays, the last date for submission of the bids shall be the next working day. **02%** of the financial bid as **earnest money** to be submitted in favor of Inland Water Transport Development Company as Call Deposit/Demand Draft/Pay Order. Bidders are required to submit **Rs. 1,000/- as tender fee** along with their bids in favor of IWTDC through Pay Order/Demand Draft.

2.2. Queries of the Bidders (if any) for seeking clarifications regarding the specifications of the items must be received in writing to the IWTDC till **28 May, 2015**. Any query received after said date may not be entertained. All queries shall be responded to within due time. IWTDC may host a Q&A session, if required, at IWTDC premises.

2.3. The bidder shall submit bids which comply with the Bidding Document. It will be the responsibility of the Bidder that all factors have been investigated and considered while submitting the Bid and no claim whatsoever including those of financial adjustments to the works/supplies awarded under this Bid Process will be entertained by the IWTDC. Neither any time schedule, nor financial adjustments arising thereof shall be permitted on account of failure by the Bidder.

2.4. The Bidder shall be deemed to have satisfied itself fully before Bid as to the correctness and sufficiency of its Bids for the supplies/works and price/cost quoted in the Bid to cover all obligations under this Bid Process.

2.5. It must be clearly understood that the Terms and Conditions and Specifications are intended to be strictly enforced. No escalation of cost except arising from increase in quantity by the Bidder on the demand and approval of the IWTDC will be permitted.

2.6. The Bidder should be fully and completely responsible for all the deliveries and deliverables to the IWTDC office.

2.7. Bidders are also required to state, in their proposals, the name, title, contact number

(landline, mobile), fax number and e-mail address of the bidder's authorized representative through whom all communications shall be directed until the process has been completed or terminated.

2.8. The IWTDC will not be responsible for any costs or expenses incurred by bidders in connection with the preparation or delivery of bids.

2.9. Failure to supply required items/services within the specified time period will invoke penalty as specified in this document.

TERMS AND CONDITIONS OF THE TENDER

3 Tender Scope

Following requirements define the scope of work of this tender.

3.1. The Selected Bidder will be responsible for the provision of services as laid down by Section 255 & 257 of Companies Ordinance 1984 with following additional services. Details of services or actions required are enclosed with tender document, but not limited to:

- a. Hatch Barge Design Validation/Verification as per enclosed documents.
- b. Inspection and implantation of validation/verification observations and procedures/methodologies.
- c. Periodic Inspection during construction
- d. Trials supervision

4. Tender Eligibility/Qualification Criteria

4.1 Eligible Bidder is a Bidder who meets following criteria in addition to the provisions as laid down by Section 254 of Companies Ordinance 1984.

- a. **Pakistan Engineering Council (PEC) Membership as 'CONSULTANT' (Mandatory)**
- b. **Minimum 07 years relevant experience**

4.2. The bidding firm must essentially have on his staff a duly qualified '**Naval Architect**' possessing the followings qualifications and ship design & construction experience to be employed on the 3rd party design verification and construction inspections (**Mandatory**) :

- a. M.Sc. in Naval Architecture & Ocean Engineering
- b. M.Sc (Ship Production Technology)
- c. Minimum 25 years relevant experience
- d. Previous experience of design & construction of Pusher Tugs/ Barges
- e. 'Construction Supervision and Trials supervision' of at least one large vessel in a

foreign yard is a must.

4.3 is registered with Tax Authorities as per prevailing tax laws.

4.4 has submitted bid for all items/services.

4.5 has not been blacklisted by any of Provincial or Federal Government Department, Agency, Organization or autonomous body or Private Sector Organization anywhere in Pakistan. **(Submission of undertaking to this effect on legal stamp paper is mandatory).**

5. Tender Cost

The Tenderer shall bear all costs / expenses associated with the preparation and submission of the Tender(s) and the IWTDC shall in no case be responsible / liable for those costs / expenses.

6. Amendment of the Tender Document

6.1 The IWTDC may, at any time prior to the deadline for submission of the Tender, at its own initiative or in response to a clarification requested by the Bidder(s), amend the Tender Document, on any account, for any reason. All amendment(s) shall be part of the Tender Document and binding on the Bidder(s).

6.2 The IWTDC shall notify the amendment(s) in writing to the prospective Tenderers as per Punjab Procurement Rules, 2014.

6.3 The IWTDC may, at its exclusive discretion, amend the Tender Document to extend the deadline for the submission of the Tender as per Punjab Procurement Rules, 2014.

7. Submission / Preparation of Tender

7.1 The Tender shall be in two parts i.e. **the Evaluation proposal and the financial proposal.**

7.2 Evaluation Proposal shall comprise the following, **without quoting the price:**

7.2.1 Undertaking (All terms & conditions and qualifications listed anywhere in this tender document have been satisfactorily vetted).

7.2.2 Certificate of Company/Firm Registration/Incorporation under the laws of Pakistan

7.2.3 Covering letter duly signed and stamped by authorized representative.

7.2.4 Provision of detailed procedure for undertaking the verification/validation of barge

7.2.5 Submission of undertaking on legal valid and attested stamp paper that the firm is not blacklisted by any of Provincial or Federal Government Department, Agency,

Organization or autonomous body or Private Sector Organization anywhere in Pakistan

7.2.6 Valid Registration Certificate for Income Tax & Sales Tax.

7.2.7 Income Tax & Sales Tax Returns for the last three (3) tax years (as applicable).

7.3 The **Financial Proposal** shall comprise on a BOQ Form duly affixed with authorized signatures, official seal/stamp in a sealed envelope with clear marking "Financial Proposal". All other documents listed for Evaluation Proposal above shall be provided in another envelope.

7.4 This is made obligatory to affix authorized signatures with official seal on all original documents, copies, certificates, literature, drawings, letters, forms and all relevant documents as part of the bids submitted by the tenderer.

8. **Tender/Bid Price**

8.1 The quoted price shall be:

8.1.1 best / final / fixed and valid until completion of all delivery i.e. not subject to variation / escalation;

8.1.2 Amount in Words & Figures and must be in Pak Rupees only;

8.1.3 inclusive of all taxes, duties, etc.

8.2 Where no prices are entered against any item(s), the price of that item shall be deemed be free of charge, and no separate payment shall be made for that item(s).

9. **Tender/Bid Validity**

The Tender shall have a minimum validity period of **03 months** from the last date for submission of the Tender.

10. **Modification / Withdrawal of the Tender**

10.1.1 The Tenderer may, by written notice served to the IWTDC, modify or withdraw the Tender after submission of the Tender, prior to the deadline for submission of the Tender.

10.1.2 The Tender, withdrawn after the deadline for submission of the Tender and prior to the expiration of the period of the Tender validity will be disqualified.

11. **Clarification of the Tender**

The IWTDC shall have the right, at his exclusive discretion, to require, in writing, further information or clarification of the Tender, from any or all the Tenderer(s). No change in the price or substance of the Tender shall be sought, offered or permitted except as required to confirm the corrections of arithmetical errors discovered in the Tender. Acceptance of any such

Correction is sole discretion of the IWTDC.

12. Correction of errors / Amendment of Tender

12.1 The Tender price as determined after arithmetic corrections shall be termed as the Corrected Total Tender Price which shall be binding upon the Tenderer.

12.2 No credit shall be given for offering delivery period earlier than the specified period.

13. EVALUATION /ACCEPTANCE CRITERIA

13.1 Least cost method shall be used and bidders who obtain 70% or more marks shall qualify for financial bidding.

Sr. No	Attributes	Max. Marks	Score distribution	Score Obtained	Requirements
1	Firm Experience in Design and Construction	10	10		20 or more years
			5		More than 10 years
			0		Less than 10 years
2	No.of Personnel's Relevant Qualification	10	10		More than 5 Personnel
			7		3 to 5 Personnel
			5		Less than 3 Personnel
3	Supervision Experience of Construction & trials	20	10		20 or more years
			7		More than 10 years
			5		Less than 10 years
4	International Affiliations	10	10		At least one international affiliation
			0		No international affiliation
			0		otherwise
5	Location of Offices	10	10		Offices in Rawalpindi/Isb/Khi
			3		Elsewhere
	Total Marks	60			

14. Notwithstanding that any details, accessories for the completion of job and required to deliver specified services are not specifically mentioned in these documents shall be considered as included in the offered/quoted Price.

15. Rejection / Acceptance of the Bid

15.1 The IWTDC shall have the right, at his exclusive discretion, to increase / decrease the quantity of any or all work/services without any change in unit prices or other terms and conditions, at the time of order placement. The IWTDC may cancel/reject all bids or proposals at any time prior to the acceptance of a bid or proposal. The IWTDC shall upon request communicate to any bidder, the grounds for its rejection of all bids or proposals, but shall not be required to justify those grounds. The IWTDC shall incur no liability, solely, by virtue of its

invoking Punjab Procurement Rules, 2014 towards the bidders. However, bidders shall be promptly informed about the rejection of the bids, if any (As per Punjab Procurement Rules, 2014).

16. Acceptance Letter

As per Punjab Procurement Rules 2014, the IWTDC shall issue the Acceptance Letter to the successful Tenderer, at least after 07 days of announcement of bid evaluation reports and prior to the expiry of the original validity period or extended validity period of the Tender.

17. Payment

17.1 The Contractor shall provide all necessary supporting documents along with invoice.

17.2 The Contractor shall submit request for Payment, to the IWTDC. The Application for Payment shall: be accompanied by such invoices, receipts etc.

17.3 The IWTDC shall pay the amount verified within thirty (30) days. The IWTDC shall make payment as per Government policy, in Pak Rupees, through cheque.

17.4 All payments shall be subject to any and all taxes, duties and levies applicable under the laws of Pakistan, for the whole period starting from issuance of Acceptance Letter till Delivery of goods.

18. Taxes and Duties

The Contractor shall be entirely responsible for all taxes, duties and other such levies imposed.

LETTER OF OFFER

Bid Reference No. _____

Bid/Quotation for _____

To:

Chief Executive Officer

Inland Water Transport Development Company,
No. 34-A, Street 27, Valley Road, Westridge, Rawalpindi.

Dear Sir,

1. Having examined the Bidding Documents, Conditions, Specifications, etc. we, the undersigned, being a company/firm/individual doing business under the name and address given below

hereby offer to provide required services/items in conformity with the bidding documents at following price(s):-

BOQ / BID PRICE / FINANCIAL COST SHEET

Item #	Item Description	Total Cost (Excl. all Taxes)	Total Cost (Incl. all Taxes) Rs.
1 (Add appropriate heading)	Hatch Barge Design Validation/Verification as per enclosed documents		
2 (Add appropriate heading)	Inspection and implantation of validation/verification observations and procedures/methodologies		
3 (Add appropriate heading)	Periodic Inspection during construction		
4 (Add appropriate heading)	Trials Supervision		
Total Bid Price (including custom duties, taxes)			
Total Cost (in words) Rs. _____			

Notes to Price Table:

1. IWTDC reserves the exclusive rights to increase/decrease the quantum of work/services/items mentioned in this bidding document.
2. We undertake, if our Bid is accepted, to deliver and complete the consignment.
3. We understand that IWTDC is not bound to accept the lowest or any bid received.
4. We do hereby declare that the Bid is made without any collusion, comparison of figures or arrangement with any other person or persons making a bid for the required items.
5. We undertake, to be bound by all Bid Conditions dated this _____ day of January/February, 2015 in the capacity of _____ duly authorized to sign bid for and on behalf of _____

Signature _____
(Name of Bidder in Block Capitals)

(Company Seal/Stamp)

Note: No cutting or overwriting is allowed. Any cutting or overwriting may lead to rejection of the financial bid.

CONDITIONS/INSTRUCTIONS

All Bids shall be subject to the following conditions/instructions:-

- Taxes will be deducted as per the law at source.
- The rates and prices shall not be subject to any adjustment and shall remain fixed for the period of the contract agreement.
- The bidder shall submit this bid in a sealed envelope at his risk and cost.
- Any bid received by IWTDC after the deadline for submission will be returned unopened.
- Bids shall be valid for a period of 03 months.
- Bids shall be quoted in Pak Rupees and the payment shall be in Pak Rupees only.
- Notwithstanding anything contained in the Bidding Documents, the Punjab Procurement Rules 2014 (PPRA-2014) shall be applicable and shall supersede any clause contained in the Bidding Documents.

**Terms of References (TOR) for 3rd Party Verification for the
Construction of Hatch Barge**

1. The objectives of 3rd party design verification and construction inspections for the hatch barge are to:

a. Verify the structural strength and integrity of essential parts of the Barge hull, its appendages and the reliability, function of the propulsion and steering systems, power generation, other features & auxiliary systems which have been built into the ship in order to maintain essential services on board.

b. Verify all design aspects including:

(1). Sizing major dimensions

(2). Structure strength

(3). Propulsion requirement

(4). Power generation

(5). Stability in different Loading conditions (Intact & Damaged)

(6). Sea keeping& Maneuvering of barge in the river environment

c. More over it will also verify compliance with international and national statutory regulations. 'Statutory' requirements broadly cover these distinct areas:

(1) Aspects of the ship's design and its structural integrity – load line and stability in the intact and damaged condition, essential propulsion, steering equipment, etc.

(2) Accident prevention, including navigational aids and pollution and fire prevention;

(3) The situation after an accident (fire, flooding) including containment and escape.

d. Ensuring application of verified barge design during construction and trials phases.

2. In order to comply Para 1 above, detailed IWTDC barge operating environment and requirements are attached as annex A.

3. Following design details will be provided by the Barge Manufacturer/ or Supplier essentially required for 'Third Party Verification' of the Design and subsequent Inspections during Construction Phases:

a. Complete Design with Calculations/ supporting material quoting the relevant rules of the 'LloydsClassification Society', Bureau Veritas or equivalent to be followed

b. Materials&2nd hand equipment (engines & generators) specifications

- c. Production Drawings
 - d. Production Schedule and Manufacturing Details
 - e. Welding design, edge preparation and Standards applicable
 - f. Surface Preparation, details and standards as finalized in the contract
 - g. Paint Scheme as finalized in the contract
 - h. Docking Plan& schedule
 - i. Trials Data Sheets
 - j. Trials Schedule
 - k. Stage Inspection to be carried out as finalized in the contract.
4. In addition to the above, the Barge Manufacturer or Supplier is to provide the Documents asked hereunder and to carry out the Tests & Trials as mentioned below:
- a. Trials Data Sheets
 - b. Equipment Performance Trials after completion of barge
 - c. Trials Schedule
 - d. Training Schedule
 - e. Planned Maintenance System (PMS) routines & schedule
 - f. Docking Plan & Schedule
 - g. Propeller, Rudders Removal Procedures
 - h. Inclining Test
 - i. Static Thrust Test (Ahead & Astern)
 - j. Set of Tools, Jigs & Fixtures
 - k. Three (03) Sets each, if available:
 - i. Parts Catalogue
 - ii. Operations Manual
 - iii. Maintenance Manuals

IWTDC OPERATING ENVIRONMENT AND REQUIREMENTS - HATCH BARGE

Primary Role:

1. The Hatch Barge is a purpose built prime mover which is primarily required to transport various types of solid/dry cargo in water flow conditions 3 -7 kts and associated river bends in River Indus. The Hatch Barge area of operation will be in River Indus from Attock to Daudkhel (both ways).

Secondary Role:

2. a. Hatch Barge will be utilized for independent transportation of solid/dry cargo of different companies existing along the river bank requesting its services.

b. Besides normal Cargo transportation, Hatch Barge will carry cargo of other barges in distress/machinery breakdowns as well.

3. Following **operating environment/requirements** need to be adhered/complied with for the Hatch Barge being offered:

a. Considering the relatively strong river flow and sharp bends, Hatch Barge is required to be in ship shaped bows including below water-line bow structure for smooth independent navigation and transiting.

b. Hatch barge should be able to manage sharp turns in the river (90 to 120 degrees) and channel width 30 meters with ease through engines performance/controls (reach Daudkhel to Attock).

c. Hatch Barge should also be able to cater Indus River water velocity/flow upto average 7 kts at various places.

d. The Hatch Barge must have hard points for getting towed by suitable Tug in pull or push mode or alongside in described river water flow environment.

e. Hatch Barge should be capable of making cruising speed of 11 Kts (75% of total engines power) and max speed of 13 Kts

f. Hatch Barge should be capable of making good speed of atleast 4 Kts against river water velocity/flow upto 7 Kts at various places when fully loaded (while moving upstream with cruising speed)

g. Hatch Barge Engines should be capable of quick responses while transiting upward or downstream especially around river bends.

h. The Hatch Barge should maintain her draught of 5 ft in fully loaded condition and in empty condition as defined in the contract through ballast tanks to maintain steerage capability in River while moving up or downstream.

j. Hatch Barge should be constructed at Daudkhel in 4 months period. (All support arrangements for men, material, construction & trials shall be by the bidder)

- k. Firm is to demonstrate Software Simulation of proposed Hatch Barge wrt transiting in empty and fully loaded condition and other navigational aspects, if applicable.

IWTDC REQUIREMENTS/SPECIFICATIONS – HATCH BARGE

S NO	DESCRIPTION	REMARKS
1.	Type	Hatch Barge for Dry Cargo transportation and capable to be towed as composite/alongside and independent unit in River Indus.
2.	Cargo	Hatch Barge hold should have 300 tons cargo capacity. Different options for stowing the cargo alongwith dimensions is required
3.	Built/Classification	Ship shape bow and equivalent Lloyd classification/equivalent for design, construction and material
4.	Dimensions	Length and breadth as appropriate to meet IWTDC roles/requirements (Length 30 to 35 m and Breadth 8 to 10 m to achieve the smooth navigation capability and speed)
5.	Draught	5 ft (feet). Hatch Barge should have 5 ft draught when fully loaded. And as defined in contract for empty state through ballast tanks of appropriate capacity.
6.	Propulsion	Two fixed pitch propellers (minimum). Propeller dia appropriate wrt obtain desired cruising speed and Full speed
7.	Main Engines	2 x Caterpillar/Yanmar (Marinized preferred)
8.	Engines Output	2 x 660 hp or appropriate to attain speeds as mentioned in Para 9 below.
9.	Gearboxes	As appropriate. (1:3 or higher is preferred)
10	Speed	Cruising speed when fully loaded - 11 kts (75% of total engines power) in still water - Min 4 Kts while moving upstream against river flow of 7 kts. Max speed - 13 kts
11	Under Tow Capability or Bollard Pull capacity	Hatch Barge should be able to be towed in push mode or astern or alongside as composite unit. For stern towing, barge must have sufficient bollard capacity (20 tons) alongwith towing gear to meet towing requirement.
12	Tonnage	Barge tonnage As appropriate
13	Plates Thickness	Mild Steel. All finished welding are to be sound, uniform and free from slag, porosity, under cutting and other defects and good engineering practices should be ensure. NDT (Non Destructive Test like DPT) Test and results to ensure no leak or gap. Bottom 10 mm Sides 8mm Deck 6 mm
14	Water tight integrity and compartmentation, Paint scheme and Anodes	Water tight integrity and sufficient compartmentation (with details) should give stability in case flooding condition. As agreed in the contact Deflooding arrangements are to be provided as per the contract.

		Paint scheme as mentioned in the contract and below water is to be applied. Anodes to be fixed at relevant places.
15	Towing and Deck Equipment and Fendring Arrangement	2 x Anchor 300 Kgs along with appropriate length & size of chain cable and winch/windlass for lowering/hoisting anchor and heaving towing rope. 1 X Towing Point at Fox'l Towing gear must have disengaging capability in case of emergency. Rope Nylon for berthing and towing alongside – 2 inch x 4 in number (total 250 meters) Barge sides with appropriate strength of wooden fender. 3 portable fenders for coming alongside berth
16	Aux. Machinery	Main and standby Generators of appropriate power Open/split air conditioning system Blast pump should be capable to blast/de-blast the respective blast tanks as mentioned in contract
17	Steering System	2 x rudders with hydraulic steering system of appropriate power with quick response. Emergency/ manual steering system in case of main steering system failure.
18	Tank capacities	Fuel oil 4500 ltrs or as appropriate Fresh water 1500 ltrs Ballast tanks as appropriate to settle the barge at 4 ft when empty
19	Auxiliary Equipment	1 x Fire pump (120 psi) 1 x Bilge pump (120 psi) (Qty as as appropriate) 1 x fresh pump Alarms of lub oil pressure and temperature, cooling system and gauges for engines rpm, gear boxes, steering gear e.t.c at respective locations and bridge(control room) as defined in the contract. Emergency lights at appropriate position. Backup arrangement for critical equipment like echo sounder, navigation lights and communication equipment as defined in the contract
20	Fire fighting	Fire extinguishers/Firefighting equipment portable (CO2 and Foam type cylinders of 7 Kgs) appropriate numbers as defined in the contract. CO2 drenching system for engine room. 5 x Fire hydrants inclusive fire hoses on upper deck and machinery/lower compartment as appropriate
21	Life saving eqpt	2 x life raft (each 6-8 men),6 life jackets, 3 x ring type life buoy, Small boat with OBM with hoisting/lowering mechanism as appropriate
22	Navigation/Comm. equipment	Magnetic Compass, Chart display with built in GPS and echo sounder/Electronic Navigational Chart,

		<p>2 x searchlights(Rotatable and powerful), 1 x Fixed high power Motorola, 2 x VHF (portable), Navigation lights (appropriate illumination), Fixed Horn high power 1 x Clinometers at bridge centerline</p>
23	Accommodation/ living	<p>Wheel house fitted with settees 2x Living/bedding room of appropriate size with 2 beds each - TBD. Sanitary facilities below deck or as appropriate Windows in aluminum frames and marine standards Small kitchenette beside the bridge with refrigerator, microwave, heating plates, fresh water, stowing places for utensils</p>
24	Construction	<p>Hatch Barge is to be fabricated/constructed at Daudkhel in 4 months.</p>
25	Trials and Acceptance Conditions	<p>Trials at Daudkhel. Trials condition/ speeds as mentioned above. Speed 1.5 kts less than desired will cause rejection of engines and supplier/firm to provide appropriate engines (mentioned type) with desired speed at no cost to the Buyer. As mentioned in the contract Steering and Rudder (full rudder) turning circle with standard/cruising engines (fully loaded) should be 140 meters Turning Dia. Otherwise, change rudder or steering system as appropriate Payments through mile stones completion.</p>