

## COCHIN PORT AUTHORITY



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No.MD/DM/FF Upgradation/2023

Date: 20-10-2023

### **NOTICE INVITING BUDGETARY OFFERS**

Cochin Port Authority (CoPA) propose to up-grade the Fire Fighting Facilities of its four Oil handling berths viz. North Tanker Berth(NTB) and South Tanker Berth (STB) commonly known as Oil Tanker Berths (OTB), Cochin Oil Terminal (COT) and Oil Berth Q4 to the requirement of latest OISD Standard 156 applicable for Fire Protection Facilities for Ports handling Hydrocarbons.

In order to take up this upgradation work, CoPA proposes to engage an experienced Consultant with a team of multi-disciplinary professionals for identification of additional facilities required for upgradation of the Fire Fighting Facilities of the Terminals as per the OISD requirements, prepare the design, drawings, detailed scope of work & technical specification, Schedule of requirements, estimate and terms and conditions that are to be incorporated in the tender for execution of Upgradation work. The Consultants shall also provide technical assistance as per the requirement of COPA so as to ensure by COPA that the works are executed in accordance with the design and other parameters recommended by the Consultants and the project is completed as per the Schedule.

Terms of Reference (TOR) of the Consultants is enclosed as **Annexure-I**.

The bidders are requested to submit the Budgetary rates as per Annexure-II attached and may be sent in sealed cover superscribing “*Consultancy services for the work of upgradation of fire fighting facilities of Tanker Terminals at Cochin Port*” to the Superintending Engineer, Cochin Port Authority at the address given above (e-mail: [sajeev.va@cochinport.gov.in](mailto:sajeev.va@cochinport.gov.in)) so as to reach us **on or before 31-10-2023 at 17:00 hrs.**

The bidders may note that the rates are invited only for **budgetary** purpose. Cochin Port is not bound to award the work to any bidders based on the **budgetary** rates submitted. Cochin Port Authority will not be liable for any financial obligation to the bidders in connection with the preparation of their budgetary rates.

Encl: As above

Sd/-

SUPERINTENDING ENGINEER(M)  
TANKER TERMINAL

## TERMS OF REFERENCE (ToR)

**CONSULTANCY SERVICES FOR THE WORK OF UPGRADATION OF FIRE FIGHTING FACILITIES OF TANKER TERMINALS COT, Q-4 AND OTB (NTB-STB) AT COCHIN PORT.****1. PROJECT INFORMATION**

Cochin Port is one among the 13 Major Ports under Ministry of Ports, Shipping & Waterways, Govt. of India located at Latitude 09 ° - 58 ' N, Longitude 76 ° - 16 ' E, in Ernakulam District, Kerala State.

Majority of Cargo handled at Cochin Port are crude oil and POL Products. Cochin Port Authority (COPA) provided facilities in its four berths viz. North Tanker Berth (NTB) and South Tanker Berth (STB) (commonly known as Oil Tanker Berths -OTB), Cochin Oil Terminal (COT) and Oil Berth Q4 for handling of POL products.

Category of Tanker Berths as per the Classification in accordance with Table-1 (for POL Products) of OISD –STD-156 OF 2017 are as follows:-

Sl. No.	Berth	Sl. No. as per Table -1	Category as per Table -1 of OISD-STD-156 of 2017	Remarks
1	South Tanker berth (STB)	(2)	Tanker Berth at a wharf or Jetty handling Ships of less than 20,000 Tonnes deadweight capacity.	These two berths are adjacent berths commonly known as Oil Tanker Berths (OTB). A common Fire water pump house is provided for catering to the fire water requirement of both the jetties
2	North Tanker Berth (NTB)	(3)	Tanker Berth at a wharf or Jetty handling Ships of 20,000 Tonnes and above but less than 50,000 Tonnes deadweight capacity.	
3	Cochin Oil Terminal (COT)	(4)	Tanker Berth at a wharf or Jetty handling Ships of 100,000 Tonnes deadweight or larger capacity.	Commissioned during 1984
4	Oil Berth- Q4	(3)	Tanker Berth at a wharf or Jetty handling Ships of 20,000 Tonnes and above but less than 50,000 Tonnes deadweight capacity.	Converted from General Cargo Berth to Oil berth during 2014.

CoPA propose to up-grade the Fire Fighting Facilities of above four Oil handling berths viz. North Tanker Berth(NTB) and South Tanker Berth (STB) commonly known as Oil Tanker Berths (OTB), Cochin Oil Terminal (COT) and Oil Berth Q4 to the requirement of latest OISD Standard 156 applicable for Fire Protection Facilities for Ports handling Hydrocarbons.

## **2. OBJECTIVES OF THE ASSIGNMENT:-**

As detailed in this Bid document Cochin Port Authority propose to up-grade the Fire Fighting Facilities of above four Oil handling berths to the requirement of latest OISD Standard 156 applicable for Fire Protection Facilities for Ports handling Hydrocarbons. In order to take up this upgradation work, CoPA proposes to engage an experienced Consultant with a team of multi-disciplinary professionals for identification of additional facilities required for upgradation of the Fire Fighting Facilities of the Terminals as per the OISD requirements, prepare the design, drawings, detailed scope of work & technical specification, Schedule of requirements, estimate and terms and conditions that are to be incorporated in the tender for execution of Upgradation work. The Consultants shall also provide technical assistance as per the requirement of COPA so as to ensure that the upgradation works are executed in accordance with the design and other parameters recommended by the Consultants and the project is completed as per the Schedule.

## **3. SCOPE OF THE ASSIGNMENT**

The scope of services to be provided by the Consultants for each of the Terminal is almost the same. Among the three Terminals, Draft of the detailed Scope of Work, Technical Specification and Estimate for OTB(NTB-STB) had already prepared by COPA and Consultant is required to modify the same as required. Scope of Work of Consultants commonly applicable for all the three Terminals are given below. The tentative implementation Schedule is given in this documents under a separate heading “Work Plan”. The Consultants are required to provide the services for each Terminal as per the priorities and tentative Schedule given. The Scope of Work of the Consultant commonly applicable to all the Terminal include but not limited to the following:-

### **3.1. Preparation of DPR covering the following:-**

#### **3.1.1. Identification of additional facilities to be created for Upgrading the Fire Fighting System:**

The activities include but not limited to the following:-

- i) Review of the following documents, viz;
  - (a) Recommendations made by PESO on the Gaps,
  - (b) Basic document prepared by COPA indicating requirements of major items to be provided/work to be performed
  - (c) Audit Report of OISD dated 18-01-2023 based on the auditing done in September, 2022 at Cochin Port.

- (d) Available lay outs and details of existing Fire Fighting Facilities of each Terminal.
  - (e) Detailed Scope of Work, Schedule of Requirement, Technical Specification and Detailed Estimate pertaining to the Upgradation of Fire Fighting Facilities of NTB-STB already prepared by Cochin Port Authority.
- ii) Study of existing fire water line/foam line lay out by visiting each of the Terminal;
  - iii) Conduct hydraulic studies to meet the new water requirement and prepare the revised fire water network / foam line lay out considering site constraints / requirements/ shortcomings, complying with latest OISD 156 norms. (The new pipeline lay out shall be designed in such a way that the existing fire waterlines / foam lines/equipments are utilized to the maximum extent possible).
  - iv) Consultant shall study the healthiness / suitability of existing Monitor Towers, Valves and other high value items / structures so as to explore the possibility of utilizing the same thereby reducing the overall project cost.
  - v) Conduct examination of the existing Pump House, to have an idea about the modifications/additional requirement of Pump House area to accommodate additional higher capacity Fire Pumps, Jockey Pump, Foam Pump etc. while upgrading the Fire Fighting Facilities.
  - vi) Study healthiness of existing civil structures and suggest modifications if any required to the structures for laying of modified/additional Fire Water pipeline/Foam line;
  - vii) Consultant shall formulate and submit preliminary recommendations on the additional facilities to be provided for upgradation of Fire Fighting System to meet the OISD Standard 156 of 2017 applicable for Fire Protection Facilities for Ports handling Hydrocarbons. In case, OISD issues further revision of OISD Standard 156 within the date of Cochin Port's Work Order to the Consultant, the Consultant shall consider such latest revision of OISD Standard, while formulating their Preliminary recommendations.
  - viii) While submitting the preliminary recommendations on additional facilities to be provided for upgradation of Fire Fighting Facilities, the Consultants shall incorporate a section detailing the steps to be taken by COPA and related documentation works for obtaining the PESO approval for the Terminal upon completion of upgradation work of Fire Fighting Facilities in compliance of OISD STD 156/2017. COPA will examine the recommendations of the Consultants in this regard and appropriate decision will be taken as to whether necessary documentation work for obtaining the PESO approval will be included under the scope of work of the tender for the upgradation work and Consultants shall incorporate necessary provision in the tender documents accordingly.

### **3.1.2. Design & Detailed Engineering of Proposed Upgradation of Fire Fighting Facilities:**

The activities include but not limited to the following:-

- i) After receipt of comments of CoPA on the preliminary recommendations, the Consultants shall design the proposed Fire Fighting System complying with the latest OISD 156 norms. The Fire water lines should be designed considering incorporation of deluge valve fittings and new proportioner fittings for foam lines.
- ii) Consultants shall prepare detailed Scope of Work, Technical Specifications, detailed drawings including Piping & Instrumentation Diagram, Layout of Infrastructure, Cable lay out of the proposed upgradation of Fire Fighting Facilities etc.
- iii) Consultants shall also prepare detailed Schedule of requirements of Fire Pumps/Foam Pumps/Jockey Pumps/ items / materials / pipelines / valves / equipments / monitors / Fire detection alarm / communications system / Cables/ Controls for the proposed upgradation (While preparing the detailed Schedule of requirements, the possibility of utilizing existing equipments and fittings shall be considered).
- iv) Preparation of detailed Technical specification for all the equipments and items included in the Schedule of Requirements;
- v) The Consultant shall prepare an indicative QAP for all critical machineries/equipments/materials and critical works indicating the stage-wise check points, acceptance levels and reference to relevant codes for incorporating in the tender by COPA. COPA shall appoint a TPIA to ensure that the work is executed by the Contractor as per the approved QAP. Therefore, QAP shall be framed by the Consultant for the work of each of the Terminal to ensure by COPA that the work is executed as per the Scope of Work, Technical Specification, Work Methodology and implementation schedule recommended by the Consultant.
- vi) Submission of document covering all the aspects mentioned above. Once COPA gives approval for the design of proposed upgradation of Fire Fighting Facilities submitted by the Consultants, detailed Scope of Work, Schedule of requirements, detailed Technical Specification, the Consultants shall prepare and submit the finalized Scope of Work, Schedule of Requirements and detailed specification of all the items, detailed drawings and all other information that are required for invitation of tenders and various terms & conditions to be incorporated in the tender to be invited by CoPA for the proposed upgradation work.
- vii) Based on the finalized Scope of Work, Schedule of Requirements and Detailed Specifications, all drawings and layouts approved by COPA, the Consultant shall prepare the detailed estimate of proposed up gradation of Fire Fighting System as per the laid down procedure of COPA.
- viii) All the Terminal are currently handling Tankers and hence the upgradation work needs to be taken up with minimum disruptions to Tanker operations. Therefore, the Consultant shall recommend a suitable methodology of work and schedule of execution of work considering the requirement and minimum Terminal shutdown. The report of Consultant shall include the duration of Terminal shutdown required for the successful execution of work. While analyzing the shut down requirements of each Terminal, the Consultant shall also consider the requirement of Port users viz. BPCL, IOCL and HPCL.
- ix) Consultant shall submit Schedule of implementation of proposed fire Fighting Facilities including CPM/PERT/Gantt chart / Bar chart.
- x) Preparation of detailed scope of work and deliverables of TPIA for floating

tenders by CoPA for appointment of TPIA (While preparing the scope of work of TPIA, the scope of work of Consultants should be taken into consideration and duplication of work among TPIA and Consultants should be avoided). Appointment of TPIA will be done by CoPA after the award of work of upgradation of Fire Fighting Facilities. TPIA is required to carry out the inspection/certification of various equipments/entire Fire Fighting System as per the approved QAP of the Contractor. TPIA has to ensure/certify that the Contractor has executed the work as per the tender specifications.

### **3.1.3. Assistance during Tendering :-**

#### **a) Tender for Upgradation of Fire Fighting Facilities :-**

Based on the details given in the DPR, COPA shall prepare the Tender Document and float the tender for the proposed Upgradation Work separately for each Terminal at the appropriate time. The Scope of Work of the Consultants during tendering stage include but not limited to the following:-

- (i) Attend pre-bid meeting (mostly through VC) and assist CoPA to prepare reply to the pre-bid queries;
- (ii) Provide assistance as required while evaluating and finalizing the tenders by COPA (Tender evaluation and contract award will be done by COPA);

#### **b) Tender for appointment of TPIA for inspection and certification of Upgradation Work:-**

Based on the details given in the DPR, COPA shall prepare the Tender Document and float the tender for the appointment of TPIA immediately upon award of Contract for Upgradation of each Terminal separately. The Scope of Work of the Consultants during tendering for TPIA include but not limited to the following:-

- (i) Attend pre-bid meeting (mostly through VC) and assist CoPA to prepare reply to the pre-bid queries;
- (ii) Provide assistance as required while evaluating and finalizing the tenders by COPA (Tender evaluation and contract award will be done by COPA);

### **3.1.4. Assistance during Contract execution of Upgradation of Fire Fighting Facilities:**

3.1.4.1. Supervision of Upgradation Work by the Consultants are not envisaged in this contract. COPA will engage TPIA to ensure that the work is executed as per the approved QAP and thereby ensure that the work is carried out as per the tender requirements. Consultants shall provide technical assistance during execution of work till successful commissioning of Upgraded Fire Fighting Facilities as and

when required by COPA. The scope of Consultants during this stage include but not limited to the following :-

- (i) The consultants shall be present in the Kick off meetings held with the Contractors / Vendors, at CoPA office. Minutes of the Kick off meeting shall be prepared by the Consultants and submitted to CoPA for approval.
- (ii) The Consultant shall identify the various elements of work, their interdependencies and review the action plan submitted by the contractor in line with COPA's requirement.
- (iii) The Consultant shall scrutinize the construction methods and activity proposed by the contractor for all works of the project, keeping in view to ensure that these are satisfactory with particular reference to the technical requirements, project implementation schedule and safety of works, personnel and the general public.
- (iv) Scrutiny of Data Sheets in respect of various equipments/Systems/materials furnished by the Contractor with reference to the tender requirements and submit report so as to enable COPA to give approval to the Contractor for the same.
- (v) Scrutiny of QAPs furnished by the Contractor with reference to the tender requirements and submit report/recommendations so as to enable COPA to issue approval of QAP to the Contractor.
- (vi) Consultants shall provide technical advices/assistance as and when required by COPA during the execution of upgradation work till its completion (Off-site support) to sort out various issues that may arise during the upgradation work.
- (vii) The respective key personnel of the Consultants are required to visit the site as and when required by COPA during the execution of Upgradation Work. The Consultants are required to indicate per man-day rate (common rate shall be applicable for all the four Key Personnel irrespective of their discipline). While evaluating the Financial bids, the total cost of site visits as per the estimated number of visits will also be considered as indicated in the Price Schedule. Payment to the Consultants towards the services rendered through site visits will be made on quarterly basis based on the actual man-days deployed at COPA site during the execution of Upgradation Work as per the rate quoted. Notice for the site visit during the Upgradation Work will be issued to the Consultants 7 days in advance. Total anticipated visits in man-days (including all the four Key Personnel) during the upgradation work execution by the Contractor for NTB-STB, Q-4 are 13 man-days each and 17 man-days for COT. (Total 43 man-days).

3.1.4.2. In case the expenditure on the upgradation work of each terminal is likely to exceed the estimate submitted by the Consultants for the respective Terminal by more than 10%, a Revised Cost estimate (RCE) is required to be prepared and submitted to COPA by the consultant, The revised estimate shall contain the following analysis:

- (i) Variation between RCE & SE for each sub-head of SE.
- (ii) Break up of each variation into –
  - a) Change in the scope of work (variation in quantities or quality).
  - b) Additional items of work.
  - c) Increase in the prices of labour and material.
  - d) An explanation for each variation.

**3.1.5. List of Deliverables by the Consultants:-**

Consultants shall submit the various documents as per the schedule indicated below:-

Sl. No.	Document	Tentative Scheduled Completion (days)		
		OTB (NTB-STB)	Q-4	COT
1	Identification of additional facilities to be created for Upgrading the Fire Fighting System & submission of Preliminary Recommendations as per 3.1.1 including one presentation for each Terminal (from Work Order)	50 days	84 days	182 days
2	Receipt of comments of COPA on Preliminary Recommendations of Consultants	70 days	112 days	210 days
3	Final DPR as per 3.1.2 (from Work Order)	84 days	133 days	238 days
4	Draft Reply to the Pre-bid Queries (from the date of Pre-bid meeting)	5 days	5 days	5 days
5	Approval of QAP of Contractor by Consultants (from the date of submission of QAP by the Contractor)	7 days	7 days	7 days
6	Reports on Data Sheets of various equipments/ Systems/materials furnished by the Contractor	3 days	3 days	3 days
7	Technical advises on various issues that may arise during execution of Upgradation work as required by COPA.	--	--	--
8	Revised cost Estimate of each Terminal in case the actual expenditure likely to exceed 10% above the sanctioned estimate.	--	--	--



### **3.1.6. Documents to be made available by Cochin Port Authority**

- 3.1.6.1. Available Port related data as may be required by the Consultant will be provided by the Authority on request. The Nodal Officer designated by the Authority shall facilitate handing over of such information to the Consultant. Available reports/documents with the Authority are as below.
- (a) Recommendations made by PESO on the Gaps,
  - (b) Basic document prepared by COPA indicating requirements of major items to be provided/work to be performed
  - (c) Audit Report of OISD dated 18-01-2023 based on the auditing done in September, 2022 at Cochin Port.
  - (d) Available lay-outs and details of existing Fire Fighting Facilities of each Terminal.
  - (e) Detailed Scope of Work, Schedule of Requirement, Technical Specification and Detailed Estimate pertaining to the Upgradation of Fire Fighting Facilities of NTB-STB already prepared by Cochin Port Authority.
- 3.1.6.2. Consultants shall make their own arrangements for transport arrangements from Consultants premises to COPA and local transport for various site visits and all other connected facilities that are required for the successful execution of the Consultancy Contract at their cost and risk.

### **3.1.7. WORK PLAN**

- 3.1.7.1. As the detailed scope of work, technical specification and estimate of work at NTB has already been prepared by COPA, review and finalisation of the same is the first priority work of the Consultants so as to enable COPA to float the tender for NTB Fire Fighting Upgradation work immediately. Second priority of the Consultant is to finalise DPR for Q-4 berth so as to enable COPA for the subsequent tendering for upgradation at Q-4 berth. DPR and subsequent tendering for upgradation work at COT need to be planned in such a way that the Work Order for execution of Work at COT by the Contractor for upgradation need to be placed about 6-7 months prior to the anticipated completion date of upgradation works at NTB so that work execution at site of COT can be commenced immediately on commissioning of Fire Fighting Facilities at NTB-STB. (Simultaneous closure of COT and NTB will hamper the cargo operations through the Port).
- 3.1.7.2. Indicative work schedule for upgradation of Fire Fighting Facilities at NTB-STB, Q-4 and COT is furnished as APPENDIX- 1 which is prepared in line with the above requirement. As per the above Work Schedule, the approximate duration of Consultancy Contract will be roughly 2<sup>1/2</sup> years.

### **3.1.8. MANPOWER REQUIREMENT:-**

- 3.1.8.1. The team of Consultants assigned for this project shall comprise of multi-disciplinary experts having all the requisite & necessary skills for carrying out the works as per the Scope of Work. Team members at various levels shall be most

appropriate for the successful completion of the Project. The responsibilities of the Consultants shall include but not limited to formulating the recommendations on various requirements for upgrading the Fire Fighting Facilities of the Terminals as per the OISD requirements, prepare the design, detailed drawings, detailed scope of work & technical specification, Schedule of requirements, estimate and terms and conditions that are to be incorporated in the tender for execution of Upgradation work etc. as detailed in this document. The Consultants shall also provide technical assistance as and when required by COPA so as to ensure that the works are executed in accordance with the design, technical specification, scope of work and work methodology recommended by the Consultants and the project is completed as per the Schedule.

3.1.8.2. Full time supervision at site by the Consultants during the execution of Upgradation of Fire Fighting Facilities of the Terminals are not included in the Scope of Work of the Consultants. (i.e. site supervision, project management and commissioning shall be under CoPA's scope)

3.1.8.3. The requirement of Consultants (Key Personnel) shall be as per the following man power deployment presented in Table -1 below. Any expert and other supporting staff required to be engaged by the Consultant in this project over and above the key personnel mentioned in the below table, to carry out the work of Consultants as per the Scope of work, shall be arranged by the Consultants at no additional cost to COPA.

3.1.9. Team composition:-

3.1.9.1. The Bidder shall provide details in respect of the key personnel proposed to be associated in providing the services to CoPA. The Bidder shall nominate at least one expert separately for each of the four skills viz. (i) Mechanical/ Piping Expert in Fire Fighting Facilities (ii) Electrical/ Instrumentation Expert (iii) Structural Designing (Civil) and Costing Expert (iv) Geo-Technical Expert.

3.1.9.2. Each of the Key Personnel must fulfill the Conditions of Eligibility specified below:

Sl. No.	Key Personnel	Educational Qualification	Experience on assignments
1	Mechanical/ Piping Expert	Graduate in Mechanical/ Production Engineering	Minimum 15 years of post qualification experience out of which the Consultant should have been worked in atleast one mechanical work involving construction/design of mechanical structures /Piping in Oil Refineries/Petrochemical Industries/Port Tanker Terminals, costing not less than 10 crores.

2	Electrical/ Instrumentation Expert	Graduate in Electrical/ Electronics/ Instrumentation Engineering	Minimum 15 years of post qualification experience out of which the Consultant should have been worked in atleast one electrical work involving design/ installation of Electrical/ instrumentation/ PLC Systems costing not less than 5 crores.
3	Structural Designing (Civil) and Costing Expert	Post Graduate in Structural Engineering	Minimum 10 years experience out of which the Consultant should have been worked in atleast one work involving design/costing/construction of marine civil structures, costing not less 10 crores.
4	Geo-Technical Expert	Post Graduate in Civil Engineering	Minimum 10 years experience out of which the Consultant should have been worked as Geo-Technical Expert in atleast one Project involving design/ costing/ construction of marine civil structure costing not less than 10 croes.

3.1.9.3. As the core jobs involved in the upgradation of Fire Fighting System are procurement and installation of Fire Pumps, installation of Fire water network, commissioning of automated Fire Fighting System etc., the bidder has to nominate Mechanical/Piping expert as Team Leader who will coordinate the team. Electrical/Electronics works include various Controls, Pump Automation, remote operation of Fire Monitors, Fire Alarm and detection System etc. Civil works anticipated are extension of existing pump houses/construction of new Pump House as required to accommodate the new pumps and to ensure the stability of existing civil structures to carry the additional fire water pipelines etc.

3.1.9.4. It is the responsibility of the bidder to ascertain significance and the duration of engagement of each expert listed above during various stages of implementation of the Project after considering the Scope of Work of the Consultants. The above experts would need to be present at all important meetings with CoPA.

3.1.9.5. Every Bidder has to provide the list of the experts nominated by him along with their Curriculum Vitae indicating details like educational qualifications, past experience etc. signed in blue ink by the respective Key Personnel and countersigned by the Bidder. The CVs shall contain an undertaking from the respective Key Personnel about his/her association for the assignment during the period specified in the Bid. Photocopy or unsigned / not countersigned CVs shall not be accepted. COPA will examine the CVs of all Professional Personnel and those not found suitable shall be replaced by the Bidder to the satisfaction of the Employer.

3.1.9.6. COPA will not normally consider any request of the Selected Bidder for substitution of Key Personnel. Substitution will, however, be permitted if the Key Personnel is not available for reasons of any incapacity or due to health, subject to equally or better qualified and experienced personnel being provided to the satisfaction of the Authority. Substitution of the Team Leader will not normally be considered and may lead to disqualification of the Bidder or termination of the Agreement.

#### 4. PAYMENT SCHEDULES:-

4.1. BOQ of the tender is in such way that the Consultancy Charges for the Terminals viz. (i) COT, (ii) Q-4 and (iii) OTB (NTB-STB) as three separate line items of single price schedule. The bidders are required to quote for all the three line items. Otherwise the offer will be disqualified and rejected. Financial evaluation will be based on overall cost quoted for all the three line items.

4.2. Price quoted by the Consultants and accepted by COPA for each Terminal will be paid based on the progress of work of the respective Terminal as per the Schedule indicated below :-

Sl. No.	Description of Deliverables	Percentage of Agreed Lump sum Fee for Part-A (Design & Engineering) for the respective Terminal
	<b>a) Part-A - Design &amp; Engineering</b>	
1	On signing of the agreement and submission of Preliminary recommendations on the additional Fire Fighting Facilities to be created for the respective Terminal as per the scope of Work mentioned at 3.1.1. and presentation thereon	20 %
2	Submission of Final DPR of the respective Terminal covering all aspects mentioned at Clause 3.1.1 & 3.1.2.	20 %
3	On award of Contract for Upgradation of Fire Fighting Facilities of the respective Terminal.	20 %
4	On satisfactory completion of Civil works of the Fire Pump House of the respective Terminal	10 %
5	On receipt of critical items viz. Fire Pumps & Jockey Pumps.	10%
6	Balance payment on successful installation & commissioning of the upgraded Fire Fighting System of the respective Terminal and acceptance by COPA	20%
	<b>Total (Part-A)</b>	<b>100%</b>
	<b>b) Part-B - Technical assistance during execution of Upgradation Work</b>	
7	Based on site-visits by Key Personnel as per actual man-days, payment on quarterly basis as per the rate quoted for the respective Terminal.	---

**5. Discount on delay in completion:-**

In case of delay in completion of Services as per the schedule prescribed in the tender document for the events 1, 3 and 5 as specified at Clause 3.1.5 of the ToR, discount of 0.2% of total consultancy accepted price of the respective Terminal per day, subject to a maximum of 10% will be imposed. However in case of delay due to reasons beyond the control of the Consultant, suitable extension shall be granted.

**6. Price Variation Clause:-**

- 6.1. The rates for all stage payments applicable for the respective Terminal which are due upto 18 months from the date of Employer's Letter of Acceptance issued to the Consultants will be firm as per the rates accepted by COPA and not subject to Price Variation.
- 6.2. For all payments of respective Terminal which are due beyond 18 months from the date of Employer's Letter of Acceptance, Price Variation Clause will be applicable on the quoted rates of the respective Terminal as per All India Consumer Price Index (No.35 for Industrial Workers, with base Index as published/applicable as on the date of Letter of Acceptance.

**TENTATIVE WORK SCHEDULE FOR NTB-STB, Q-4 & COT**

Sl. No.	Activity	Duration	Completion period from Work order
A	<b>TENTATIVE SCHEDULE FOR NTB-STB</b>		
1	Review of 4 Base Documents	1 week	2 weeks from WO
2	Visit at Cochin Port and Study of the Existing Terminal (NTB)	2 weeks	Total 4 weeks from WO
i)	Study on Mechanical Works		
ii)	Study on Electrical Works		
iii)	Study on Civil Works		
3	Hydraulic Studies/ calculations to assess the water requirement for the enhanced capacity.	1 week	Total 5 weeks from WO
4	Finalization of Fire Water Network /foam line lay out considering site constraints/ requirements/ shortcomings, complying with latest OISD 156 norms.	2 weeks	Total 6 weeks from WO
5	Finalization of Detailed Scope of Work, Technical Specification and Schedule of Requirements prepared by CoPA based on the findings of Activity 3&4.	3 weeks	Total 9 weeks from WO
6	Finalisation of structural design, detailed Scope of work, Technical Specification, drawings/all other relevant details pertaining to the construction of extension of Pump House.	3 weeks	Total 9 weeks from WO
7	Finalization of Electrical Drawings	3 weeks	Total 9 weeks from WO
8	Finalization of detailed estimate as per the procedure of COPA.	3 weeks	Total 12 weeks from WO
9	Administrative approval for investment proposal, Tender Finalisation & issue WO for upgradation of Fire Fighting System by COPA.	18 weeks	Total 30 weeks from WO to Consultants
10	Execution of Work & Commissioning of Fire Fighting System at NTB-STB by the Contractor.	52 weeks	From WO to the Contractor( Total duration of Consultants Work: 82 weeks from Work Order)

Sl. No.	Activity	Duration	Completion period from Work order
<b>B</b>	<b>TENTATIVE SCHEDULE FOR Q-4</b>		
1	Review of 4 Base Documents	1 week	5 weeks from WO
2	Visit at Cochin Port and Study of the Existing Terminal (Q-4)	2 weeks	Total 7 weeks from WO
i)	Study on Mechanical Works		
ii)	Study on Electrical Works		
iii)	Study on Civil Works		
3	Submission of Detailed Project Report covering all aspects including the detailed Estimate of Work.	12 weeks	Total 19 weeks from WO
4	Administrative approval for investment proposal, Tender Finalisation & issue WO for upgradation of Fire Fighting System by COPA.	18 weeks	Total 37 weeks from WO to Consultants.
5	Execution of Work & Commissioning of Fire Fighting System at Q-4 by the Contractor.	52 weeks	From WO to the Contractor ( Total duration of Consultants Work: 89 weeks from Work Order)
<b>C</b>	<b>TENTATIVE SCHEDULE FOR COT</b>		
1	Review of 4 Base Documents	1 week	16 weeks from WO
2	Visit at Cochin Port and Study of the Existing Terminal (COT)	4 weeks	Total 20 weeks from WO
i)	Study on Mechanical Works		
ii)	Study on Electrical Works		
iii)	Study on Civil Works		
3	Submission of Detailed Project Report covering all aspects including the detailed Estimate of Work.	14 weeks	Total 34 weeks from WO
4	Administrative approval for investment proposal, Tender Finalisation & issue WO for upgradation of Fire Fighting System by COPA.	18 weeks	Total 52 weeks from WO to Consultants.
5	Execution of Work & Commissioning of Fire Fighting System at COT by the Contractor.	78 weeks	From WO to the Contractor ( Total duration of Consultants Work: 130 weeks from Work Order)

**PRICE SCHEDULE**

COCHIN PORT AUTHORITY							
TENDER NO.							
NAME OF WORK		CONSULTANCY SERVICES FOR THE WORK OF UPGRADATION OF FIRE FIGHTING FACILITIES OF TANKER TERMINALS VIZ. COT, Q-4 AND OTB(NTB-STB) AT COCHIN PORT					
SCHEDULE-II- FINANCIAL PROPOSAL – SCHEDULE OF QUANTITIES TO BE DONE ON CONTRACT							
CONSULTANTS NAME & ADDRESS							
Sl. No	TERMINAL	SUB-HEADS		APPROX. QTY.	UNIT	UNIT PRICE	TOTAL AMOUNT (Rupees)
(1)	(2)	(3)		(4)	(5)	(6)	(7) = (4) X (6)
1	COT	a	Design & Engineering	1	Lump sum		
		b	Technical Assistance during Upgradation Work through site visits	17	Man-days		
2	Q 4	a	Design & Engineering	1	Lump sum		
		b	Technical Assistance during Upgradation Work through site visits	13	Man-days		
3	NTB-STB	a	Design & Engineering	1	Lump sum		
		b	Technical Assistance during Upgradation Work through site visits	13	Man-days		
Grand total of Sl. No.1, 2 & 3							
Grand Total in words							
NOTE:-							
1. It is mandatory to quote the rate for all the three line-items, otherwise the tender will be rejected							
2. Financial evaluation will be based on overall cost quoted for all the three line items.							
3. The rate quoted for the item “Technical Assistance during Upgradation Work through site visits (Sub-Heads -b)” is only estimate for evaluation purpose. Payment towards the above service will be made on quarterly basis as per the actual number of site visits performed by the Consultant.							



ANNEXURE-III

MAN POWER REQUIREMENT

Bidders are requested to indicate the approximate number of man days considered by them for completing the Design & Engineering Work for each of the Terminal as per the Scope of Work indicated in this NIBO as per the below format

Sl.No.	Terminal	Work	Approximate no. of Man-days considered
1	Cochin Oil Terminal (COT)	Design & Engineering	
2	Oil Berth Q-4	Design & Engineering	
3	NTB-STB	Design & Engineering	

Signature of the Bidder