



COCHIN PORT TRUST

Tele:91-0484 -2666639/0484-258-2300

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**TENDER DOCUMENT FOR
“PROVIDING HT SUPPLY TO
M/S. INDIAN OIL CORPORATION LIMITED FOR THE
LPG IMPORT TERMINAL AT PUTHUVYPEEN”**

(TECHNICAL BID)

(e-Tendering Mode)

Website: www.tenderwizard.com/COPT

TENDER NO. F2/T-22/HT Supply-IOCL LPG-Puthuvype/2020-M Dt: 18/12/2020

**OFFICE OF THE
CHIEF MECHANICAL ENGINEER
I FLOOR, NEW ADMINISTRATIVE BUILDING,
COCHIN PORT TRUST,
WILLINGDON ISLAND,
COCHIN-682 009**

Price: Rs.5,250/-

COCHIN PORT TRUST
MECHANICAL ENGINEERING DEPARTMENT
Tender No: **F2/T-22/HT Supply-IOCL LPG-Puthuvype/2020-M**
Tender for
**“PROVIDING HT SUPPLY TO M/S. INDIAN OIL CORPORATION LIMITED FOR
THE LPG IMPORT TERMINAL AT PUTHUVYPEEN”**

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MECHANICAL ENGINEERING DEPARTMENT
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“PROVIDING HT SUPPLY TO M/S. INDIAN OIL CORPORATION LIMITED FOR THE
LPG IMPORT TERMINAL AT PUTHUVYPEEN”

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MECHANICAL ENGINEERING DEPARTMENT
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**SECTION I
COCHIN PORT TRUST**

**Chief Mechanical Engineer's Office
Cochin Port Trust, Willingdon Island,
Cochin – 682009, KERALA
Tele: 91-0484-2666639/
0484-258-2300/2351/2305
e-mail id: cme@cochinport.gov.in
website: www.cochinport.gov.in**



Tender No. F2/T-22/HT Supply-IOCL LPG-Puthuvype/2020-M Dt:18/12/2020

1. NOTICE INVITING TENDER in Detail

1. Electronic Tenders (e-tenders) in **Single Stage Two Cover** bidding procedure [Technical Bid and Price Bid] **on percentage basis** are invited by the Chief Mechanical Engineer, Cochin Port Trust, Cochin-682 009, for the work of **“PROVIDING HT SUPPLY TO M/S. INDIAN OIL CORPORATION LIMITED FOR THE LPG IMPORT TERMINAL AT PUTHUVYPEEN”**.
2. **MINIMUM QUALIFICATION CRITERIA (MQC)**

Tenderer must fulfill the following minimum qualifying criteria to prove the techno-commercial competence and submit the documents in support thereof:

i. Experience

The tenderer should have executed HT Electrical contract works involving **“Supply, laying, testing and commissioning of 11kV or above grade HT cable by HDD method”** as detailed below, during the last 7 (seven) years ending on **30/11/2020**;

(a) One contract work costing not less than **Rs.82,22,360/-**

OR

(b) Two contract works, each costing not less than **Rs.51,38,975/-**

OR

(c) Three contract works, each costing not less than **Rs.41,11,180/-**

This may be furnished in the Proforma in ‘Annexure-4’ of the tender document. Also submit copy of PO/ Work order and Completion Certificate issued by the Client for those previous experiences mentioned in ‘Annexure-4’. **The experience of having carried out the work under subcontract to the main contractor will not be considered.**

ii. Financial Turnover

Average annual financial turnover should be at least **Rs.30,83,385/-** during the last three (3) years, ending 31st March 2019 [2016-'17, 2017-18, 2018-19]. This may be furnished in the Proforma in ‘Annexure-5’ of the tender document and also proof of annual turnover duly certified by Chartered Accountant shall be furnished.

iii. License

The bidder should possess valid ‘**A Class**’ Electrical Contract License issued by any State/ Central Licensing Authority. Copy of the valid License shall be furnished.

Explanatory Notes:

Note 1: Following enhancement factors will be used for the costs of works executed for bringing the financial figures to a common base value in respect of the works completed in past years.

Table 1.1

Year before	Multiplying factor
One year [2019]	1.07
Two years [2018]	1.14
Three years [2017]	1.21
Four years [2016]	1.28
Five years [2015]	1.35
Six years [2014]	1.42

Note 2: Experience certificates of works executed in private sectors/ organizations shall be considered for qualification, only on submission of TDS certificate along with work order and completion certificate.

Note 3: Performance/ completion certificate from the client shall be submitted in support of the assignments/ works performed and claimed by the tenderer to fulfill the eligibility criteria for qualification. The completion certificate/ performance certificate shall contain the work order no, work order value, completed cost of work and completion date.

Note 4: A statement duly certified by the Chartered Accountant showing the average annual Financial Turnover during the last three financial years and audited financial statements for the last three years ending 2018-19 shall be submitted.

3. Eventhough the tenderers meet the above qualifying criteria, they will be disqualified if they have:

- (i) Made misleading or false representations in the forms, statements and attachments submitted in proof of the qualification requirements; and/ or
- (ii) Record of poor performance such as abandoning the works, not properly completing the contract, inordinate delays in completion, litigation history or financial failures etc.

4. Pertinent information to the tender is given in the following tables:

- (i) Schedule of different activities till submission of the tender are detailed as under:

Table 1.2

Sl. No.	Particulars	Date and Time
(1)	Tender e-publication date	18/12/2020
(2)	Download period of tender documents	10.00 hrs. on 21/12/2020 to 14.30hrs.on 15/01/2021
(3)	Date of pre-bid meeting	30/12/2020 11:30 hrs
(4)	Last date for seeking clarification	30/12/2020
(5)	Likely date for uploading the addendum/ clarification if any,	07/01/2021
(6)	Last date and time of submission of bid	15/01/2021 at 15.00 hrs.
(7)	Date and time of opening the bid	15/01/2021 at 15.30hrs.

(ii) Bid information:

Table 1.3

(1)	Estimated Amount put to tender	Rs.1,02,77,949/- excluding GST (Rupees One Crore Two lakh seventy seven thousand nine hundred and forty nine only)
(2)	Earnest Money Deposit. (Exemption shall be given as per Clause 15 below)	No EMD will be applicable for this tender as per the Ministry of Ports, Shipping and Waterways letter no: PD-24015/71/2020-PDVII (e-340929) dated 26/11/2020 and OM No:F.9/4/2020-PPD dated 12/11/2020 of Ministry of Finance, Dept. of Expenditure. In lieu of Bid Security/EMD, Bid Security Declaration shall be furnished as per the format enclosed with the tender document. Otherwise the bids will be rejected.
(3)	Cost of Tender document / Processing Fee (Exemption shall be given as per Clause 15 below)	Rs. 5,250/- (Rupees Five thousand two hundred and fifty only), including GST@ 5%, to be furnished through Account Payee Demand Draft/ Banker's Cheque drawn in favour of the "FA&CAO, Cochin Port Trust", from any Nationalized / Scheduled Bank in India
(4)	Validity period of tender	120 days from the last date for receipt of tenders
(5)	Period of Contract	5 months from the date of LOA
(6)	Milestone completion activity	Power Supply should be made available at the IOCL LPG Storage terminal by 15 th June, 2021. (The IOCL LPG Terminal being a project of National importance, the power supply shall be made available at the terminal on or before 15 th June 2021 as per Schedule. The bidders shall ensure that the project is completed as per schedule and no extension will be granted.)

5. The scope of work includes the following :
 - (i) Supply, laying, testing and commissioning approximately 3.3 kMtrs. of 3C x 300 sq.mm. 11 KV XLPE cable from Port's Ring Main Unit placed near the entrance of the road towards MULT to the LPG storage premises of IOCL at Puthuvypin.
 - (ii) Supply, installation, testing and commissioning of HT switchgears including RMU, single panels, CMU etc along the cable route.
 - (iii) Earthing the entire installation.
6. Tender documents can be downloaded from the e-Tendering portal www.tenderwizard.com/COPT on the dates specified in the above table by making online requisition. Tender document will also be available in Cochin Port website (www.cochinport.gov.in) as well as the Central Public Procurement Portal <https://eprocure.gov.in> , which can be downloaded for submission.
7. The cost of tender document/ processing fee shall be furnished in the form of Account Payee Demand Draft/ Banker's Cheque drawn in favour of the Financial Adviser & Chief Accounts Officer, CoPT from any Scheduled Bank in India payable at Cochin, along with the bid.
8. The tenderers need to obtain the one time User ID & password for login to in e-**Tendering** system from the service provider **KEONICS** by paying registration fees by online Payment using Credit/Debit Card/Net banking or DD in favour of "KSEDCL, Bangalore. The details of e-tender facilitator is available through Telephone Nos. **080 49352000/ 09605557738**.

9. The intending tenderer must have valid Class-II or III digital signature certificate to submit the bid. For further details and to obtain the digital signature please contact e-Tender Help Desk No. 080 – 40482000 / 9746118529.
10. Tenders shall be submitted “**on line**” strictly in accordance with the Instructions to Tenderers and Terms & Conditions given in the tender document. The bidders should submit scanned copy of all the required documents such as DD towards the cost of tender/ processing fee, Bid Security Declaration, proof of experience, financial details etc. through the e-tendering portal. **Tenderers shall submit the BOQ in Price Bid in the online portal www.tenderwizard.com/COPT only, otherwise the tender will be rejected.**
11. Bid Security Declaration and Cost of tender Documents/processing fee, both in original, and hard copies of the MQC documents shall be received by post or in person or deposited the same in the tender box located in the reception area of main administrative building of Cochin Port Trust at the Office of Chief Mechanical Engineer, Cochin Port Trust, Cochin-09 on or before **15.00Hrs on 15/01/2021**, failing which the tenders will summarily be rejected.
12. The tenderer is responsible to download Addendums/ Amendments/ Errata/ Replies to the queries of the tenderer etc., if any, issued by the Employer, from the website before submission of the bid. Any shortfall in submissions of the said Addendums/ Amendments/Errata/Replies to the queries of the tenderer duly signed etc. along with the downloaded documents while submitting the bid will not be considered. Incomplete tenders will be rejected.
13. Cochin Port Trust will not be held responsible for any technical snag or net work failure during online bidding. It is the bidders responsibility to comply with the system requirement i.e. hardware, software and internet connectivity at bidder’s premises to access the e-Tender portal. Under any circumstances, Cochin Port Trust shall not be liable to the bidders for any direct/indirect loss or damages incurred by them arising out of incorrect use of the e-Tender system or internet connectivity failures.
14. The bidder shall submit the original documents towards the cost of tender/ processing fee and Bid Security Declaration and the power of attorney along with letter of submission in a sealed cover to the Chief Mechanical Engineer, Cochin Port Trust, W/Island, Cochin–682009, KERALA, before tender submission date and time. Tenders without submitting the original documents as above, before submission date and time of the tender will be liable for rejection.
15. **Exemption from the payment of EMD and Cost of Tender document shall be given to Micro and Small Enterprises (MSEs) as defined in MSE Procurement Policy issued by Department of Micro, Small and Medium Enterprises (MSME) or are registered with the Central Purchase Organization or the concerned Ministry or Department as provided in GFR 2017. In this regard the firm should submit valid certificate.**
16. The undersigned reserves the right to reject/cancel/postpone any one or all tenders at any stage of the tender, which will be binding on all bidders.

Sd/-
CHIEF MECHANICAL ENGINEER
COCHIN PORT TRUST

SECTION -I
COCHIN PORT TRUST
MECHANICAL ENGINEERING DEPARTMENT
Tender No: **F2/T-22/HT Supply-IOCL LPG-Puthuvype/2020-M**
“PROVIDING HT SUPPLY TO M/S. INDIAN OIL CORPORATION LIMITED FOR
THE LPG IMPORT TERMINAL AT PUTHUVYPEEN”

(PLEASE NOTE: The IOCL LPG Terminal being a project of National importance, the power supply shall be made available at the terminal on or before 15th June 2021 as per Schedule. The bidders shall ensure that the project is completed as per schedule and no extension will be granted)

2. INSTRUCTIONS TO TENDERERS

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COCHIN PORT TRUST
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PROVIDING HT SUPPLY TO M/S. INDIAN OIL CORPORATION LIMITED
FOR THE LPG IMPORT TERMINAL AT PUTHUVYPEEN

(PLEASE NOTE: The IOCL LPG Terminal being a project of National importance, the power supply shall be made available at the terminal on or before 15th June 2021 as per Schedule. The bidders shall ensure that the project is completed as per schedule and no extension will be granted)

2. INSTRUCTIONS TO TENDERERS

1. Introduction

The subject work is for “Providing HT supply to M/s.IOCL for the LPG storage terminal at Puthuvypeen”. The brief scope of work is given below:

- a. Supply, laying, testing & commissioning of approximately 3.3kM of 3Cx300sq.mm, 11KV FRLSH XLPE cable from the RMU at the entrance of road towards MULT in the Puthuvypin main Road, to the IOCL LPG storage terminal near to Light House by open trench/ HDD/ through underground pipe.
- b. Supply, installation, testing and commissioning of 5 Nos. 11 KV SF6 single DO Switch Unit along the cable route at different locations for looping and terminating the HT cables.
- c. Supply, installation and commissioning of 2 Nos. 11 KV SF6 LBS RMU Unit for tapping the HT supply.
- d. Installation and commissioning of one number Commercial Metering Unit panel inside the IOCL storage terminal premises.
- e. Supply and providing end termination kit for HT cables.
- f. Earthing the entire installation.
- g. Getting CEA approval and Testing & Commissioning of the entire system.

2. General Instructions

- 2.1 The work is to be executed as described in the Bid document and in particular in the Technical specifications, Special Conditions, Schedule of Quantities and drawings and in general includes, but is not limited to supplying all items including consumables and equipment necessary to execute the work as described in the Bid Document.
- 2.2 Before submitting the bid, the bidder shall examine carefully all conditions of contract, specifications, drawings etc. supplied herewith. The bidders shall inspect the site of work with prior appointment with the Engineer of the work to get himself acquainted with the site conditions and to assess and satisfy himself of the difficulties and constraints which may be involved in executing the work in the location. It will be deemed that prior to the submission of tender, the tenderer has visited the site and has satisfied himself as to the nature and location of the work, general and local conditions, particularly those pertaining to transportation, handling and availability and storage of materials, availability of labour, weather conditions, tidal variations at site, working conditions, ground level, nature of soil etc. and that the tenderer has estimated his cost accordingly and the Port Trust will be in no way responsible for the lack of such knowledge and also consequences thereof to the tenderer. Failure to visit the site will in no way

relieve the successful bidder of any of the obligations in performing the work in accordance with this Bid Document including addendum/corrigendum, within the quoted price.

- 2.3 A bidder shall be deemed to have full knowledge of all documents, site conditions etc. whether he has inspected them or not. The submission of a bid by the bidder implies that he has read the notice and conditions of contract and has made himself aware of the scope and specifications and other factors bearing on the bid and that they are binding on him.
- 2.4 The bidders may please note that the EMPLOYER will not entertain any correspondence or query on the status of the offers received against this Bid. Bidders are also requested not to depute any of their personnel or agents to visit the Employer's offices for making such enquiries till finalisation of the bid. Should the EMPLOYER find it necessary to seek any clarification, technical or otherwise the concerned bidder will be duly contacted by the EMPLOYER.
- 2.5 Canvassing in any form by the bidder or by any other agency acting on behalf of the bidder after submission of the bid may disqualify the said bidder. The Employer's decision in this regard shall be final and binding on the bidder.
- 2.6 EMPLOYER will not be liable for any financial obligation in connection with the work until such time the EMPLOYER has communicated to the successful bidder in writing his decision to entrust the Work (covered by the bid document).
- 2.7 Telex/E-mail offers will not be considered. Bidders should prepare their bid themselves. Bids submitted by agents will not be recognized.
- 2.8 Bids received after the due date and time and any change in bid after the specified date will be rejected. EMPLOYER will not be responsible for the loss of the bid document or for the delay in postal transit.
- 2.9 In case of an unscheduled holiday on the prescribed closing/opening day of the bid, the next working day will be treated as the scheduled prescribed day of closing/opening of the bid.
- 2.10 While evaluating the document, regard would be paid to National security considerations, at the discretion of the Cochin Port Trust. Bid received from any bidder may be summarily rejected on National security consideration without any intimation thereof to the bidder.
- 2.11 If there are varying or conflicting provisions made in any document forming part of the contract, the Chief Mechanical Engineer, Cochin Port Trust, Cochin – 682009 shall be the deciding authority with regard to the intention of the document which will be binding on the Bidder.
- 2.12 In case the department desires to inspect the equipments/ machinery for confirmation of its availability and capacity etc., necessary arrangements shall be made by the contractor for such inspection at his own cost.
- 2.13 Any error in description, any omissions there from shall not vitiate the contract or release the contractors from the execution of whole or any part of the works comprised therein according to drawing and specifications or from any of his obligations under the contract
- 2.14 All the Bank Guarantees (BGs) to be furnished by the contractors in connection with the tender shall be sent to the Chief Mechanical Engineer, Cochin Port Trust directly by the issuing bank under registered post with AD. The contractor shall take the responsibility of sending BGs directly to the Port Trust by the issuing bank.

- 2.15 **The contractor shall comply with all the provisions of the Indian Workmen's Compensations Act, Provident Fund Regulations, Employees Provident Fund and ESI Act etc. amended from time to time and rules framed there under and other laws affecting the contract labour that may be brought in to force from time to time.**
- 2.16 **The contractor shall be registered under EPF and ESI Act and the employees employed under them shall be covered in the EPF and ESI scheme. Work Order shall be issued only to the contractors who are registered under EPF organisation and ESI Corporation. The contractors shall regularly remit the employer and employee contribution to the authorities. If not, the Department would remit the same and the amount so remitted shall be deducted from the part/final bill of contractors.**
- 2.17 **The contractor shall be registered under GST and shall furnish documentary evidence in support of valid GST registration.**
- 3. Invitation for Bids:**
The Invitation for Bids is open to all eligible bidders meeting the eligibility criteria.
- 4. Purchase of Tender Documents:**
Tender documents can be downloaded from the e-Tendering portal www.tenderwizard.com/COPT on the dates specified in the above table by making online requisition. Tender document will also be available in Cochin Port website (www.cochinport.gov.in) as well as the Central Public Procurement Portal <https://eprocure.gov.in> , which can be downloaded for submission. Demand Draft/Banker's cheque for cost of tender document/ tender processing fee drawn in favour of the Financial Adviser & Chief Accounts Officer(FA &CAO), CoPT from any Scheduled / Nationalised Bank having its branch at Cochin shall be submitted at the time of submission of bids and scanned copy of the same shall be attached with the e-tender.
In case of tender document being downloaded from the website, at the time of submission of the tender document (the hard copy), the tenderer shall give an undertaking that no changes have been made in the document. Port Tender document will be treated as authentic tender and if any discrepancy is noticed at any stage between the Port's tender document and the one submitted by the tenderer, the Port's document shall prevail. For the discrepancies found at any time, the tenderer shall be liable for legal action.
- 5. One Bid per Bidder:**
Each bidder shall submit only one bid. A bidder who submits or participates in more than one Bid will cause all the proposals with the Bidder's participation to be disqualified.
- 6. The Bidder**
The Bidder shall be a single entity / Consortium.
- 7. Cost of Bidding:**
The bidder shall bear all costs associated with the preparation and submission of his Bid, and the Employer will in no case be responsible and liable for those costs.
- 8. Site visit:**
The Bidder, at the Bidder's own responsibility and risk is encouraged to visit and examine the work site and its surroundings and obtain all information that may be necessary for preparing the Bid and entering into a contract for execution of the Works. The costs of visiting the site shall be at the Bidders' own expense.

9. Clarification of the Bidding Documents:

- 9.1 The Tenderers are advised to examine the Tender Document carefully and if there be or appear to be any ambiguity or discrepancy in the documents, or any clarifications needed on the Tender Documents; these shall be referred to the Chief Mechanical Engineer in writing at the following address, so as to reach them at one day before the date fixed for the pre-bid meeting. It is to be noted that no queries, clarifications will be answered after the pre-bid conference.

THE CHIEF MECHANICAL ENGINEER,
CHIEF MECHANICAL ENGINEER'S OFFICE,
COCHIN PORT TRUST, WILLINGDON ISLAND,
KOCHI-9,KERALA, INDIA.

Ph:- 91-0484-2666639/2582300.

Fax:-91-0484-2666639.

Email: cme@cochinport.gov.in

9.2 **Pre-Bid Meeting:**

An online pre-bid conference will be held in the CME's office of Cochin Port Trust, to answer clarifications, if any, on the bid document. This conference will be held on the date notified in the Notice Inviting Tender. Non-attendance at the pre-bid meeting will not be a cause for disqualification of a bidder. Minutes of the meeting, including the text of the questions raised (without identifying the source of enquiry) and the responses given will be published in e- tender portal www.tenderwizard.com/COPT, Cochin Port website (www.cochinport.gov.in) as well as in the Central Public Procurement Portal <https://eprocure.gov.in> as Addendum/corrigendum. Any modification of the bid documents as a result of the pre-bid meeting shall be made exclusively through the issue of an Addendum/corrigendum.

10. Amendment of Bidding Documents:

The Chief Mechanical Engineer, Cochin Port Trust shall have the right to omit or suspend certain items of work or revise or amend the Bid documents prior to the due date of submission of the Bid by issuance of addendum/corrigendum. Any addendum /corrigendum thus issued shall be part of the tender documents. The addendum/corrigendum, if any, shall only be hosted in the e-tender portal as well as in the website of the Cochin Port. It is the responsibility of the Bidders to download such addendum/ corrigendum hosted in the website and submit the same duly signed along with the Bid. In order to afford the Bidders with reasonable time to take addendum into account, or for any other reason, the Port Trust may, at its discretion, extend the due date for submission of Bid and bid extension notice shall be hosted in the web site.

11. Preparation of bids:

All documents relating to the bid shall be in the English language.

12. 12.1 Minimum Qualifying Criteria: (MQC)

(a) Experience

The tenderer should have executed HT Electrical contract works involving "Supply, laying, testing and commissioning of 11kV or above grade HT cable by HDD method." as detailed below, to their Clients during the last 7 (seven) years ending on **30/11/2020**;

(a) One contract work costing not less than **Rs.82,22,360/- OR**

(b) Two contract works, each costing not less than **Rs.51,38,975/- OR**

(c) Three contract works, each costing not less than **Rs.41,11,180/-**

This may be furnished in the Proforma in ‘Annexure-4’ of the tender document. Also submit copy of PO/ Work order and Completion Certificate issued by the Client for those previous experiences mentioned in ‘Annexure-4’. **The experience of having carried out the work under subcontract to the main contractor will not be considered.**

(b) Financial Turnover

Average annual financial turnover should be at least **Rs.30,83,385/-** during the last three (3) years, ending 31st March 2019 [2016-'17, 2017-18, 2018-19]. This may be furnished in the Proforma in ‘Annexure-5’ of the tender document and also proof of annual turnover duly certified by Chartered Accountant shall be furnished.

(c) License

The bidder should possess valid ‘A Class’ Electrical Contract License issued by any State/ Central licensing authority. Copy of the valid License shall be furnished.

Explanatory notes for to (a) & (b):

Note 1:- Following enhancement factors will be used for the costs of works executed for bringing the financial figures to a common base value in respect of the works completed in past years.

Table 1.1

Year before	Multiplying factor
One year [2019]	1.07
Two years [2018]	1.14
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Five years [2015]	1.35
Six years [2014]	1.42

Note 2 : Experience certificate of works executed in private sectors/ organizations shall be considered for qualification, only on submission of TDS certificate along with work order and completion certificate.

Note 3: Performance/ completion certificate from the client shall be submitted in support of the assignments/ works performed and claimed by the tenderer to fulfill the eligibility criteria for qualification. The completion certificate/ performance certificate shall contain the work order no, work order value, completed cost of work and completion date.

Note 4: The works reckoned for the above purpose are those executed by the tenderers as prime contractor and not as a subcontractor. Experience having executed the work as sub contract will not be considered for evaluation

Note 5: A statement duly certified by the Chartered Accountant showing the average annual Financial Turnover during the last three financial years and audited financial statements for the last three years ending 2018-19 shall be submitted.

12.2 Even though the bidders meet the above qualifying criteria, they are subject to be disqualified if they have:

- i) made misleading or false representations in the forms, statements and attachments submitted in proof of the qualification requirements; and/or

- ii) record of poor performance such as abandoning the works, not properly completing the contract, inordinate delays in completion, litigation history, or financial failures etc..

13. Bid Prices:

13.1 Percentage basis contracts

The Bidder shall fill the percentage in figures above / below of departmental estimate amount for the work noted in the Bill of Quantities (As per the instructions given in BOQ) and the total quoted amount in words will appear automatically. The contract shall be for the whole work based on the priced Bill of Quantities submitted by the Bidder. Tenderer should ensure that his tendered percentage as per Price bid is not mentioned anywhere in any other documents in Technical bid submission, directly or indirectly. If any such mention is made, the tender will become invalid and shall become liable for rejection.

The rate quoted by the Tenderer shall be inclusive of the cost of provision of plant and equipment, materials, labour, execution, supervision, maintenance, overheads and profits and every incidental and contingent cost and charges whatsoever, excluding Goods and Service Tax (GST). GST as may be applicable from time to time shall be shown separately in the invoice.

13.2 Currencies of Bid and Payment:

The unit rates and the prices shall be quoted by the bidder entirely in Indian National Rupees (INR).

14. Bid Validity:

Bids shall remain valid for a period not less than 120 (one hundred and twenty) days after the deadline date for bid submission. A bid valid for a shorter period shall be rejected by the Employer as non-responsive. Should any tenderer withdraw his tender before these periods, or make any modification in the terms and conditions of the tender which are not acceptable to the department, action will be taken as per Clause 15 below.

15. Bid Security / EMD:

15.1 No EMD will be applicable for this tender as per the Ministry of Ports, Shipping and Waterways letter no: PD-24015/71/2020-PDVII (e-340929) dated 26/11/2020 and OM No:F.9/4/2020-PPD dated 12/11/2020 of Ministry of Finance, Dept. of Expenditure. In lieu of Bid Security/EMD, **Bid Security Declaration** shall be furnished as per the format enclosed with the tender document (Annexure-12). Otherwise the bids will be rejected.

15.2 Cochin Port Trust reserves its right to suspend the bidders from participating in the future tenders invited by Cochin Port Trust for a period of Two years from the date of such Suspension Orders, under the following circumstances:-

- (a) If after the opening of Tender, if the bidder withdraw or modify his Tender during the period of validity specified in the Bid Documents (including extended validity, if any)
- (b) In case of a successful bidder fails
 - (i) to commence the work, within the specified time limit
 - (ii) to sign the Agreement or furnish the required Performance Security within the specified time limit

16. No Alternative Proposals by Bidders:

Bidders shall submit offers that comply with the requirements of the bidding documents. Alternatives will not be considered.

17. Format and Signing of Bid:

- 17.1 The Tenderer shall prepare one set of his Tender (all Volumes), duly completed and signed, along with the set of Drawings and other documents mentioned hereinafter. The Bid shall be typed or written in indelible ink and shall be signed by a person or persons duly authorised to sign on behalf of the Bidder with signature duly witnessed and company seal affixed. Then it shall be scanned and upload in the e tender portal for submission. However the Power of Attorney (in original) authorizing the signatory/s of the Tender shall be submitted in hard copy along with submission of tender fees and Bid Security Declaration.
- 17.2 If the tender is made by an individual it shall be signed by his full name and his address shall be given. In the event of the tender being submitted by a registered partnership firm, it must be signed individually by each partner thereof or it must be signed by person holding a proper power-of- attorney authorising him to do so and to bind the partner in all matters pertaining to the contract including the arbitration clause, such power-of-attorney to be attached with the tender which must disclose that the firm is duly registered under Indian Partnership Act. If the tender is made by a Limited Company it shall be signed by a duly authorised person who shall produce with the tender satisfactory evidence of the authorisation. In the case of a Limited Company the tender should be accompanied by the Memorandum and Articles of Association of the Company.

18. Bid Submission:

Bid shall be submitted in two parts, **Part - I: Technical Bid** and **Part - II: Price Bid through e- tender mode.**

For online submission of **Technical Bid**, the scanned copies of the documents under item nos. a) to q) as detailed in clause 19.1 below need to be submitted through e-Tendering mode on www.tenderwizard.com/ COPT. Price bid (Schedule-II) in the provided format shall be submitted only through e-tendering mode on www.tenderwizard.com/COPT before 15.00 Hrs on **the date notified in NIT. Price bid in hard copy need not be submitted.**

Technical Bid containing the documents listed in (a) to (f) under Clause 19.1 below in original shall be submitted in a sealed envelope, superscribing thereon the Tender Number, Name of Work, date notified for submission of tender and the Name of the Tenderer. Tenders can be brought either in person or sent by registered post/ courier. Tenders brought in person, shall be submitted in Chief Mechanical Engineer's office / put in the Tender box on or before the due date specified above.

19. Information Required In The Bid

19.1 **Part I -Technical Bid** shall contain the following:

- a) Bid Security Declaration as described in Clause 15.1 above in the Format enclosed (Annexure-12).
- b) Financial instrument towards Cost of tender document processing fee.
- c) Letter of Submission (vide **Annexure-1**)
- d) Power of Attorney (in original) in favour of signatory/s to the Tender, duly authenticated by Notary Public. (vide **Annexure**).
- e) Organization Details (vide **Annexure-3**)
- f) Details of experience as per **Annexure-4** and Certificates in proof of experience in similar works as detailed under clause 12 of Instruction to bidders.

Explanatory notes:

- (1) Original or notary certified copy of completion certificates of each work issued by the owner/ the responsible officers of the owner under whom he has executed such contracts and work order shall be attached. The certificate shall invariably contain the following among other things:
 - a) Details of work involved specifying the nature of work
 - b) The completion cost of the work and
 - c) Date of commencement ; and
 - d) Date of completion of the work.
 - (2) If the experience in similar works is as a member of joint venture, notary attested copy of joint venture agreement in this respect shall be attached.
 - (3) The works indicated in **Annexure-4** will only be considered for evaluation. Mere submission of work completion certificate will not be considered as Eligible Assignments
- g) A statement duly certified by Chartered Accountant showing Average Financial turnover of the tenderer over the last three financial years (vide **Annexure-5**) supported by Audited Financial statements for the last three years.
 - h) Bid document including all addendum/corrigendum duly signed and sealed
 - i) Partnership deed or Memorandum and Articles of Association of the company and Registration certificate of the company as the case may be.
 - j) Copies of PAN, GST, EPF and ESI registration
 - k) “A” grade Electrical Contractor’s license
- ~~l) A detailed method statement (Technical Note) for carrying out of the works, along with a implementation schedule showing sequence of operation and the time frame for various segments of temporary and permanent works.(vide **Annexure-6**). The information provided will form part of the work methodology and the same shall be in line with the Specifications and Bill of quantities.~~
 - ~~m) A list of Plant and equipment proposed to be engaged for work. (vide **Annexure-7**) The equipment indicated in the **Annexure-7** will form part of contract agreement and as such the bidders are requested to indicate the availability of the equipment at site at what stage of the construction period the equipment would made available.~~
 - n) A declaration to the effect that (vide **Annexure -8**):-
 - i) ~~All details regarding construction plant and machinery, temporary work and personnel for site organization considered necessary and sufficient for the work have been furnished in the **Annexure 7** and that such plant, temporary works and personnel for site organization will be available at appropriate time of relevant works for which the equipment have been proposed at site till the completion of the respective work.~~
 - ii) No conditions are incorporated in the financial bid. In case any conditions are specified in the financial bid, the tender will be rejected summarily without making any further reference to the bidder.
 - iii) We have not made any payment or illegal gratification to any persons/ authority connected with the bid process so as to influence the bid process and have not committed any offence under PC Act in connection with the bid.
 - iv) We disclose with that we have made / not made payments or propose to be made to any intermediaries (agents) etc in connection with the bid.
 - v) We do hereby confirm that no changes have been made in the tender

document downloaded and submitted by us for the above bid. Port Tender document will be treated as authentic tender and if any discrepancy is noticed at any stage between the Port's tender document and the one submitted by the tenderer, the Port's document shall prevail.

- o) Bank information for e- Payment system as per **Annexure-10**.
- 19.2 **Part II : "Price Bid"** shall contain the Preamble to BoQ and Bill of Quantities (**Schedule II**) which shall be duly filled in and fully priced and shall be submitted only **in e-tendering mode**.
- 20. Deadline for Submission of the Bids:**
E-tenders attaching all documents shall be submitted 'on-line' in the **e tender portal** strictly in accordance with the terms and conditions of tender document before **the time and the day notified** in Table 1.2 of NIT.
The sealed Technical Bid in hard copy containing all the documents listed in Clause 19.1 above, items (a) to (f) in original, superscribed with the Tender Number, Name of Work, date notified for submission of tender and the Name of the Tenderer, should reach the office of the Chief Mechanical Engineer, Cochin Port Trust, Cochin-9, on or before the time and the day notified in NIT.
- 21. Late Bids:**
Any Bid received by the Employer after the Bid due date will be returned unopened to the bidder.
- 22. Bid Opening**
The Chief Mechanical Engineer or his representative will open the tenders in the web portal www.tenderwizard.com/COPT . The technical bids of the tenders received will be opened on the due date of submission.
Technical Bid: Technical Bid shall be opened in the office of the **Chief Mechanical Engineer, Cochin Port Trust** at 15.30 Hours on the last date fixed for receiving the Tenders. Failure to submit Bid Security Declaration in lieu of EMD/valid NSIC/MSME certificate will make the tender defective and will be treated invalid and price bids of those tenderers will not be opened.
- 23. Bid Opening – Price Bid:**
Price Bid of those tenderers found responsive in the evaluation of Technical bid, will be opened later. Short listed bidders will be communicated about the date and time of opening of the price bid.
- 24. Clarification of Bids:**
To assist in the examination and comparison of Bids, the Employer may, at his discretion, ask any Bidder for clarification of his Bid, including breakdown of unit rates. The request for clarification and the response shall be in writing, but no change in the price or substance of the Bid shall be sought, offered, or permitted.
No Bidder shall contact the Employer on any matter relating to his bid from the time of the bid opening to the time the contract is awarded. If the Bidder wishes to bring additional information to the notice of the Employer, he should do so in writing.
Any effort by the Bidder to influence the Employer's bid evaluation, bid comparison or contract award decisions, may result in the rejection of his bid.
- 25. Examination of Bids and Determination of Responsiveness:**
Prior to detailed evaluation of Bids, Cochin Port Trust will determine whether each Bid
- (a) meets the minimum eligibility criteria defined in Clause 12.
 - (b) has been properly signed by an authorised signatory (accredited

representative) holding Power of Attorney in his favour. The Power of Attorney shall inter alia include a provision to bind the Bidder to settlement of disputes clause;

- (c) is accompanied by the required Bid security declaration and;
- (d) is responsive to the requirements of the Bidding documents.
- (e) A responsive Bid is one which conforms to all the terms, conditions and specification of the Bidding documents, without material deviation or reservation. A material deviation or reservation is one which affects in any substantial way the scope, quality or performance of the Works;
- (f) which limits in any substantial way, the Employer's rights or the Bidder's obligations under the Contract; or
- (g) whose rectification would affect unfairly the competitive position of other Bidders presenting responsive Bids.
- (h) Undertakes in the Technical Bid that he has not incorporated any conditions in the Financial Bid.

If a Bid is not substantially responsive, it shall be rejected by the Employer, and may not subsequently be made responsive by correction or withdrawal of the non-conforming deviation or reservation.

26. Evaluation and Comparison of Bids:

The Employer will evaluate and compare only the Bids determined to be responsive in accordance with Clause 25.

27. Alteration of tender documents:

No alteration shall be made in any of the tender documents or in the Bill of Quantities and the tender shall comply strictly with the terms and conditions of the tender document. The Employer may however ask any tenderer for clarifications of his tender if required. Nevertheless, no tenderer will be permitted to alter his tender price after opening of the tender.

28. Alternative conditions and Proposal:

The Tenderer shall note that alternative or qualifying tender conditions, or alternative design proposal for whole or part of the work will not be acceptable. Tenders containing any qualifying conditions or even Tenderer's clarifications in any form will be treated as non-responsive and will run the risk of rejection. Price Bid of such Tenderer's will not be opened.

29. Award of Contract:

The Employer will award the Contract to the bidder whose bid has been determined to be responsive to the bidding documents and who has offered the lowest evaluated bid price, provided that such bidder has been determined to be

- (a) Eligible in accordance with the provisions of Clause 12, and
- (b) Qualified in accordance with the provisions of Clause 12.

Release of Bid Security / EMD:

No EMD will be applicable till 31/12/2021 as per the Ministry of Ports, Shipping and Waterways letter no: PD-24015/71/2020-PDVII (e-340929) dated 26/11/2020 and OM No:F.9/4/2020-PPD dated 12/11/2020 of Ministry of Finance, Dept. of Expenditure `

30. Performance Security:

- 30.1 Within not later than 21 days for domestic bids and 28 days for international bids of receipt of the Letter of Acceptance, the successful Bidder shall deliver to the Employer a Performance Security in the form of Account Payee Demand Draft, Fixed Deposit Receipt from a commercial Bank or Bank Guarantee from a Commercial Bank or payment online in an acceptable form safeguarding the

- purchaser's interest in all respects, for an amount equivalent to **3%** of the Contract price rounded off to the nearest Rs. 1,000/-.
- 30.2 If the performance security is provided by the successful Bidder in the form of a Bank Guarantee, it shall be issued by a Nationalised /Scheduled Indian bank having its branch at Cochin acceptable by **Cochin Port Trust**. The BG shall be issued in favor of **Cochin Port Trust** in the Format enclosed in **Annexure-A of GCC**.
- 30.3 In the event of the tenderer, after the issue of the communication of acceptance of offer by the Board, failing /refusing to execute the agreement as hereinafter provided, the tenderer shall be deemed to have abandoned the contract and such an act shall amount to and be construed as the contractor's calculated and willful breach of the contract, the cost and consequence of which shall be to the sole account of the tenderer and upon such an event the Board shall have full right to claim damages therefore either together with or in addition to the conditions mentioned in Clause 15.2.
- 31. Signing of Agreement**
The successful tenderer will be required to execute an Agreement at his expense within 28 (twenty eight) days from the date of work order, on proper value Kerala State Stamp Paper in the prescribed form. The agreement as finally executed will include the Employer's Bid Documents and the Bidder's offer as finally accepted by the EMPLOYER together with addendum/corrigendum, bid clarification and all correspondences exchanged between EMPLOYER and the bidder, if any. Till the formal agreement is executed, the Letter of Acceptance together with the offer as finally accepted along with correspondences shall form a binding contract between the two parties.
- 32. Fraud and Corrupt Practices:**
- 32.1 The bidder and their respective officers, employees, agents and advisers shall observe the highest standard of ethics during the Selection Process. Notwithstanding anything to the contrary contained in this document, the Port shall reject the tender without being liable in any manner whatsoever to the bidder, if it determines that the bidder has, directly or indirectly or through an agent, engaged in corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice (collectively the "Prohibited Practices") in the Selection Process. In such an event, the Port shall, without prejudice to its any other rights or remedies, forfeit and appropriate the Bid Security or Performance Security, as the case may be, as mutually agreed genuine pre-estimated compensation and damages payable to the Port for, inter alia, time, cost and effort of the Authority, in regard to the Tender, including consideration and evaluation of such Bidder's Proposal. Such Bidder shall not be eligible to participate in any tender or RFP issued by the Authority during a period of 2 (two) years from the date such Bidder is found by the Authority to have directly or through an agent, engaged or indulged in any corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice, as the case may be.
- 32.2 For the purposes of this Clause, the following terms shall have the meaning hereinafter respectively assigned to them:
- (a) "corrupt practice" means
- (i) the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence the action of any person connected with the Selection Process (for avoidance of doubt, offering of employment to or

employing or engaging in any manner whatsoever, directly or indirectly, any official of the Authority who is or has been associated in any manner, directly or indirectly with the Selection Process or the LOA or has dealt with matters concerning the Agreement or arising there from, before or after the execution thereof, at any time prior to the expiry of one year from the date such official resigns or retires from or otherwise ceases to be in the service of the Authority, shall be deemed to constitute influencing the actions of a person connected with the Selection Process; or

- (ii) engaging in any manner whatsoever, whether during the Selection Process or after the issue of the LOA or after the execution of the Agreement, as the case may be, any person in respect of any matter relating to the Project or the LOA or the Agreement, who at any time has been or is a legal, financial or technical consultant/ adviser of the Authority in relation to any matter concerning the Project;
- (b) “fraudulent practice” means a misrepresentation or omission of facts or disclosure of incomplete facts, in order to influence the Selection Process;
- (c) “coercive practice” means impairing or harming or threatening to impair or harm, directly or indirectly, any persons or property to influence any person’s participation or action in the Selection Process;
- (d) “undesirable practice” means
 - (i) establishing contact with any person connected with or employed or engaged by the Authority with the objective of canvassing, lobbying or in any manner influencing or attempting to influence the Selection Process; or
 - (ii) having a Conflict of Interest; and
- (e) “restrictive practice” means forming a cartel or arriving at any understanding or arrangement among Applicants with the objective of restricting or manipulating a full and fair competition in the Selection Process.

33. Rejection of Tender:

Any Tender not conforming to the foregoing instructions will not be considered. The Employer does not bind himself to accept the lowest or any tender and has the right to reject any tender without assigning any reason thereof. No representation whatsoever will be entertained on this account.

33.1 Conditions for bid submission by JV

33.2 Companies/Contractors may jointly undertake contract/contracts. Each entity would be jointly and severally responsible for completing the task as per the contract, however declaration of the Lead member to be indicated by bidders, however JV has to designate in their MOU. The firms with at least 26% equity holding each be allowed to jointly meet the legibility criteria.

33.3 Bid submitted by an unincorporated Joint Venture of companies (JV) /Consortium of companies (Consortium), shall comply with the following requirements:

- a) There shall be a Joint Venture Agreement between the constituent firms specific for the contract package for which the bids are submitted. The JV Agreement shall include among other things, the joint venture’s objectives, the proposed management structures, the proposed distribution of responsibilities both financial as well as technical for execution of the work, the contribution of each partner to joint venture operation, the commitment of all partners to jointly and severally liable for due performance, recourse/

- sanctions within the joint venture in the event of default or withdrawal of any partner and arrangements for providing the required indemnities.
- b) The most experienced partner will be nominated as the Lead Partner and his nomination shall be evidenced by submitting power of attorney signed by the legally authorised signatories of all the partners.
 - c) The Lead Partner of the joint venture will provide suitable experienced personnel for at least 3 (three) positions in the assignment during the whole period of contract execution and a statement to this effect should be included in the Joint Venture Agreement.
 - d) The bid and in the case of the successful bidder, the Agreement, shall be signed and / or executed in such a manner for making it legally binding on all partners (including operative parts of the ensuing Contract in respect of Agreement of Arbitration, etc.). The Contract shall be signed by legally authorised signatories of all partners.
 - e) The Lead Partner shall be authorised to incur liabilities and to receive instructions for and on behalf of the partners of the Joint venture and entire execution of the Contract including payment shall be carried out exclusively through the Lead Partner. A Statement to this effect should be included in the Joint Venture Agreement.
 - f) All partners of the Joint Venture shall be liable jointly and severally for the execution of the Contract in accordance with the Contract terms, and a Statement to this effect should be included in the Joint Venture Agreement.
 - g) Bid Security as required can be furnished by any partner but it shall be in the name of Joint venture.
 - h) Performance Guarantee, as required, will be furnished by all partner(s), out of their accounts, in proportion of their participation in joint venture.
 - i) Joint Venture Agreement shall contain a clause to the effect that there shall be a separate JV Bank Account (distinct from the Bank Account of the individual partners) to which the individual partners shall contribute their share capital and/or working capital.
 - j) Joint Venture Agreement shall also contain a clause to the effect that the financial obligation of the JV shall be discharged through the said JV Bank Account only and also all payment received by JV from the Employer shall be through that account only.
 - k) Participation by a firm in more than one JV /Consortium is not permissible. A firm who submits bid on individual capacity is not eligible to be a partner of a JV /Consortium. In case a firm's name appears in more than one bid then both application may be rejected.
 - l) Each partner must submit the complete documentation, or portions applicable thereto, required to qualify the firm for bidding.
 - m) All the partners of the JV/Consortium shall be jointly and severally liable for due performance, recourse/sanctions within the joint venture in the event of default of any partner and arrangements for providing the required indemnities.
 - n) Notwithstanding demarcation or allotment of work among the partners, each partner shall be liable for non performance of the whole contract irrespective of their demarcation or share of work.
 - o) The Lead Partner shall be authorized to act on behalf of the JV/Consortium.
 - p) All the correspondences between the Employer and the contractor shall be routed through the Lead Partner.

- q) In the event of default by the Lead Partner, it shall be construed as default of the Contractor; and Employer will take action under relevant clause(s) of the Bid Document and/or General Terms and Conditions of Contract.
- r) A legally binding Joint Venture/Consortium Agreement signed by authorised signatories of all the partners of the JV/Consortium, as per the proforma at **Annexure-13** shall be enclosed with the bid.
- s) In case, the Joint Venture/Consortium Agreement enclosed with the bid is not acceptable to the Employer, the JV /Consortium will modify the agreement so as to be acceptable to the Employer.
- t) Power of attorney duly executed and signed by legally authorized signatories of all the partners, authorizing the Lead Partner (a) to submit bid, negotiate and conclude contract and incur all liabilities therewith on behalf of the partner(s) of the JV /Consortium during the bidding process; and (b) in the event of a successful bid, to incur liabilities and receive instructions for and on behalf of the partner(s) of the JV /Consortium and to carry out the entire execution of the contract including payment, exclusively through Lead Partner, as per the proforma at **Annexure-14**, which shall be duly authenticated by a notary public or equivalent certifying authority, shall be enclosed with the bid.
- u) An undertaking that all the partners are jointly and severally liable to the Employer for the performance of the contract shall be enclosed with the bid.
- v) In the event of any partner leaving the JV, it shall be intimated to the Employer within 30 days by other partner(s). Failure to do so shall be construed as default of the contractor and the Employer may take action under relevant clause(s) of the Bid Document and/or General Terms and Conditions of Contract
- w) The contractor shall not alter its composition or legal status without the prior written permission of the Employer. Failure to do so shall be construed as default of the contractor and the Employer may take action under relevant clause(s) of the Bid Document and/or General Terms and Conditions of Contract.
- x) One of the partners of JV/Consortium should have downloaded the bid documents.
- y) Number of partners in JV/Consortium shall be limited to maximum of three.

SIGNATURE OF BIDDER

SECTION -I
COCHIN PORT TRUST
MECHANICAL ENGINEERING DEPARTMENT
Tender No: **F2/T-22/HT Supply-IOCL LPG-Puthuvype/2020-M**
“PROVIDING HT SUPPLY TO M/S. INDIAN OIL CORPORATION LIMITED FOR
THE LPG IMPORT TERMINAL AT PUTHUVYPEEN”

3. FORM OF BID

To

The Board of Trustees,
Cochin Port Trust

Through

The Chief Mechanical Engineer
Cochin Port Trust, Cochin -9

Tender for the work of “PROVIDING HT SUPPLY TO M/S. INDIAN OIL CORPORATION LIMITED FOR THE LPG IMPORT TERMINAL AT PUTHUVYPEEN”

I/We have read and examined the Notice inviting tenders, Instructions to tenderers, Form of Agreement, Contract Data, General Conditions of Contract, General description of work, Special conditions of Contract, Technical Specifications, Drawings, Preamble, Bill of Quantities, & other documents and rules referred to in the General Conditions of Contract and all other contents in the tender document for the work.

I/We hereby tender for the execution of the work specified in the underwritten memorandum within the time specified in such memorandum at the rates specified in the schedule attached hereto and in accordance in all respects with the specifications designs, drawings and instructions in writing referred to in clause 16 of the General Conditions of Contract and with such materials as are provided for, by and in all other respects in accordance with such conditions so far as applicable.

M E M O R A N D U M

- | | | |
|--|---|---|
| a) General description of work | : | PROVIDING HT SUPPLY TO M/S. INDIAN OIL CORPORATION LIMITED FOR THE LPG IMPORT TERMINAL AT PUTHUVYPEEN” |
| b) Estimated cost | : | Rs.1,02,77,949/- |
| c) Earnest Money | : | In lieu of Bid Security/EMD, Bid Security Declaration shall be furnished as per the format enclosed (Annexure-12). |
| d) Security Deposit | : | 3% of the value of the contract awarded or the value of the work done whichever is higher. |
| e) Percentage, if any, to be deducted from the bills | : | Nil |

- f) Time allowed for commencement of work from the date of receipt of work order : **7 days**
- g) Time allowed for the work from the date of commencement of work. : 5 Months from the date of LoA.
- h) Schedule, specifications, conditions, drawings etc. as per contents sheet attached. : As per “Contents” sheet attached.

I/ We agree to keep the tender open for 120 days from the due date of submission and not to make any modifications in its terms and conditions

Should this tender be accepted, I/We hereby agree to abide by and fulfill all the terms and provisions of the said conditions of contract annexed here to so far as applicable or in default thereof forfeit and pay to the Board the sum of money mentioned in the said conditions and to execute an agreement with the Board in the prescribed form or in default thereof to forfeit the earnest money deposited by me/us.

Bid Security Declaration is hereby submitted in lieu of Bid Security/ Earnest Money Deposit for the tender, thereby fully accepting that I/We will be suspended and shall not be eligible to participate in the tenders invited by Cochin Port Trust, for a period of two years from the date of such suspension order, without prejudice to any other rights or remedies of the said Board in office should I/We fail to commence the work specified in the Contract data or should I/We not deposit the full amount of Performance Security specified in the above Memorandum in accordance with clause 52 of the said conditions of contract otherwise the said sum of Rs. shall be retained by the Board as on account of such security deposit as aforesaid or (b) the full value of which shall be retained by the Board on account of the security deposit to execute all the works referred to in the tender documents upon the terms and conditions contained or referred to therein and to carry out such deviations as may be ordered, upto maximum of the percentage mentioned in Clause 40.1 of General Conditions of Contract and those in excess of that limit at the rates to be determined in accordance with the provision contained in Clause 40.3 of the General Conditions of Contract.

Dated the day of 20 .

Signature of the Tenderer

Address :

Witness :

Address :

Occupation :

ACCEPTANCE

The above tender (as modified by you as provided in the letters mentioned hereunder) is accepted by me for and on behalf of the Board of Trustees for a sum of Rs.....
..... (Rupees

The letters referred to below shall form part of this contract Agreement

- a) ..
- b) ..
- c)

Dated.....

**Chief Mechanical Engineer
Cochin Port Trust**

SECTION -I
COCHIN PORT TRUST
MECHANICAL ENGINEERING DEPARTMENT
Tender No: **F2/T-22/HT Supply-IOCL LPG-Puthuvype/2020-M**
“PROVIDING HT SUPPLY TO M/S. INDIAN OIL CORPORATION LIMITED FOR
THE LPG IMPORT TERMINAL AT PUTHUVYPEEN”

4. FORM OF AGREEMENT

AGREEMENT No. ... of

AGREEMENT FOR THE WORK OF “PROVIDING HT SUPPLY TO M/S. INDIAN
OIL CORPORATION LIMITED FOR THE LPG IMPORT TERMINAL AT
PUTHUVYPEEN”

THIS AGREEMENT IS MADE on this day of
BETWEEN THE BOARD OF TRUSTEES OF COCHIN PORT TRUST , a body
corporate under the Major Port Trust Act, 1963 having office on Willingdon Island,
Cochin – 682009 represented by its *Chief Mechanical Engineer/*Deputy Chief
Mechanical Engineer/*Superintending Engineer Shri..... S/o
..... aged years residing at Village
..... Taluk District (hereinafter referred to as the Employer
which expression shall include his successors, assignees and administrators in the office)
of the one part and M/s. represented by Shri.
aged S/o residing at Village
..... Taluk District (hereinafter referred as “Contractors”
which expression shall include their successors, assignees and administrators) of the other
part.

WHEREAS the Employer invited tenders for
..... vide Tender Notice Date
..... and the Contractor submitted a tender for the same giving rates subject to the
terms and conditions etc. of the tender document.

AND WHEREAS the said tender submitted by the Contractor has been accepted
by the Employer vide work order No dated, issued
to the Contractor while accepting their tender.

NOW THESE PRESENTS WITNESSETH and the parties hereby agree as follows.

1. The tender submitted by the Contractor for execution for the Board, of the work specified in the underwritten memorandum within the time specified in such memorandum at the rates specified in the schedule attached hereto and in accordance in all respects with the specifications, designs, drawings and instructions in writing referred to in Clause 16 of the “General Conditions of Contract” and with such materials as are provided for, by and in all other respects in accordance with such conditions is accepted.
2. It is mutually understood and agreed that, notwithstanding that the works has been sectioned, every part of it shall be deemed to be supplementary to and complementary of every other part and shall be read with it or into it.

3. The Contractor agreed to abide by and fulfill all the terms and provisions of the said Conditions of Contract or in default thereof forfeit and pay to the Board the sum of money mentioned in the said conditions.
4. The sum of Rs...../- [Rupees.....only) has been deposited by the Contractor with Financial Adviser and Chief Accounts Officer of the Port Trust as Performance Security (a) the full value of which is to be absolutely forfeited to the Board in office without prejudice to any other rights or remedies of the said Board in office should the Contractor fail to commence the work specified in underwritten memorandum or should the Contractor not deposit the full amount of security deposit specified in under written memorandum otherwise the said sum of Rs...../- shall be retained by the Board as on account of such security deposit as aforesaid or (b) the full value of which shall be retained by the Board on account of the security deposit to execute all the works referred to in the tender documents upon the terms and conditions contained or referred to therein and to carry out such deviations as may be ordered, upto maximum of the percentage mentioned in Clause 40.1 of the Conditions of Contract and those in excess of that limit at the rates to be determined in accordance with the provisions contained in Clause 40.3 of the Conditions of Contract.
5. It is mutually agreed that the tender submitted in its entirety shall form part of this agreement. Apart from the tender the following shall also form part of the agreement
 - a) The Letter of Acceptance ;
 - b) Bill of Quantities and
 - c) Letters exchanged between the Employer and the Tenderer upto the issue of Letter of Acceptance as separately listed and annexed here to.
 - d) Replies to Prebid queries and amendments issued, if any.

M E M O R A N D U M

- | | |
|--|--|
| a) General description of work | : “PROVIDING HT SUPPLY TO M/S. INDIAN OIL CORPORATION LIMITED FOR THE LPG IMPORT TERMINAL AT PUTHUVYPEEN” |
| b) Estimated cost | : Rs.1,02,77,949/- |
| c) Tender processing fee | : Rs.5250/- |
| d) Earnest Money | : In lieu of Bid Security/EMD, Bid Security Declaration shall be furnished as per the format enclosed (Annexure-12). |
| e) Security Deposit | : 3% of the value of the contract awarded or the value of the work done whichever is higher. |
| f) Percentage, if any, to be deducted from the bills | : NIL |

- g) Time allowed for commencement of work from the date of issue of LoA : 7 days
- h) Time allowed for the work from the date of commencement of work. : 5 Months from date of issue of LoA.
- i) Schedule, specifications, conditions, drawings etc. : as per contents sheet attached.

IN WITNESS WHEREOF THE CONTRACTOR hereunto set his hand and seal on behalf of M/s..... and on behalf of the Board of Trustees of COCHIN PORT TRUST, the CHIEF MECHANICAL ENGINEER has set his hand and seal and common seal of Trustees has been hereunto affixed the day and year first written above.

CONTRACTOR

Signed, sealed and delivered
 By Shri.....
 Of M/s.....
 (COMMON SEAL OF THE FIRM)

Signed and affixed seal in the presence of :

1) Signature with address :

2) Signature with address :

Signed, sealed and delivered by the

CHIEF MECHANICAL ENGINEER
 Cochin Port Trust
 on behalf of Board of
 Trustees of Port of Cochin.

EMPLOYER

Signed and affixed the common seal of
 Board of Trustees of the Port of Cochin

In the presence of

1)

2)

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4. CONTRACT DATA

[To be filled up before issuing tender document as applicable for each tender]

Items marked “N/A” do not apply in this Contract.

Sl. No.	Description	Reference Clause .No. in GCC																
1	The following documents are also part of the Contract																	
	The Schedule of other Contractors (Will be informed in due course)	(8.2)																
	The Schedule of Key personnel	(9)																
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Qualification of Staff</th> <th style="text-align: center;">No.</th> <th style="text-align: center;">Min. Experience (Years)</th> <th style="text-align: center;">Rate of recovery in case of non compliance</th> </tr> </thead> <tbody> <tr> <td>i) Project Manager (Principal Technical Representative) with Electrical Engg: Degree</td> <td style="text-align: center;">1</td> <td style="text-align: center;">10</td> <td style="text-align: center;">Rs.30,000/- p.m.</td> </tr> <tr> <td>ii) Technical Representative with Electrical Engg. degree</td> <td style="text-align: center;">1</td> <td style="text-align: center;">5</td> <td style="text-align: center;">Rs.25,000/- p.m.</td> </tr> <tr> <td>iii) Project/ Site Engineer Graduate Engineer or Diploma Engineer</td> <td style="text-align: center;">2</td> <td style="text-align: center;">2 5</td> <td style="text-align: center;">Rs.15,000/- p.m.</td> </tr> </tbody> </table>	Qualification of Staff	No.	Min. Experience (Years)	Rate of recovery in case of non compliance	i) Project Manager (Principal Technical Representative) with Electrical Engg: Degree	1	10	Rs.30,000/- p.m.	ii) Technical Representative with Electrical Engg. degree	1	5	Rs.25,000/- p.m.	iii) Project/ Site Engineer Graduate Engineer or Diploma Engineer	2	2 5	Rs.15,000/- p.m.	
Qualification of Staff	No.	Min. Experience (Years)	Rate of recovery in case of non compliance															
i) Project Manager (Principal Technical Representative) with Electrical Engg: Degree	1	10	Rs.30,000/- p.m.															
ii) Technical Representative with Electrical Engg. degree	1	5	Rs.25,000/- p.m.															
iii) Project/ Site Engineer Graduate Engineer or Diploma Engineer	2	2 5	Rs.15,000/- p.m.															
2	The Employer is	(1)																
	The Board of Trustees, Cochin Port Trust, Cochin -9																	
	Name of Authorized Representative:																	
	Name : Smt. M.Beena Chairman, Cochin Port Trust, Cochin -9																	
3	The Engineer is																	
	Name : Shri. V,Thuraipandian Chief Mechanical Engineer Cochin Port Trust, Cochin-9																	

Sl. No.	Description	Reference Clause .No. in GCC						
	Name of Nominee is : Will be notified in LoA/ LoI							
	Name : Shri..... Cochin Port Trust Cochin-9							
4	Name of Contract “PROVIDING HT SUPPLY TO M/S. INDIAN OIL CORPORATION LIMITED FOR THE LPG IMPORT TERMINAL AT PUTHUVYPEEN” Tender no:F2/T-22/HT Supply-IOCL LPG-Puthuvype/2020-M Dt:18/12/2020	(1)						
5	6 copies of Contract Agreement shall be furnished by the Contractor	[7.1]						
6	Tender document and other data are available at Cochin Port web site and e-tender portal. Chief Mechanical Engineer’s Office, Cochin Port Trust, W/Island, Cochin – 682009, KERALA,	(7.2)						
7	The Intended completion Date for the whole of the Work is 5 Months from date of issue of LoA with the following milestones:	(17,28)						
8	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td colspan="2" data-bbox="355 1081 965 1115">Milestone dates:</td> </tr> <tr> <td data-bbox="355 1126 965 1220" style="text-align: center;">Physical works to be completed</td> <td data-bbox="965 1126 1224 1220" style="text-align: center;">Period from the date of Issue of LoA</td> </tr> <tr> <td data-bbox="355 1232 965 1326">Power Supply should be made available at the IOCL LPG Storage terminal by 15th June, 2021.</td> <td data-bbox="965 1232 1224 1326"></td> </tr> </table>	Milestone dates:		Physical works to be completed	Period from the date of Issue of LoA	Power Supply should be made available at the IOCL LPG Storage terminal by 15 th June, 2021.		
Milestone dates:								
Physical works to be completed	Period from the date of Issue of LoA							
Power Supply should be made available at the IOCL LPG Storage terminal by 15 th June, 2021.								
9	<p>The following shall form part of the Contract Document:</p> <ol style="list-style-type: none"> (1) Agreement (2) Letter of Acceptance (3) Bill of quantities (4) Contractor’s Bid (5) Correspondence exchanged after the opening of the Bid and before the issue of Letter of Acceptance by which the Condition of Contract are amended, varied or modified in any way by mutual consent (to be enumerated). (6) Contract Data (7) Conditions of Contract (8) General Description and Special Conditions of Contract (9) Technical Specifications (10) Drawings and (11) Any other documents listed in the Contract Data as forming part of the Contract. 	(2.3)						
10	The Contractor shall submit a Program for the Works within 7 days of date of the Letter of Acceptance/LoI.	(27)						

Sl. No.	Description	Reference Clause .No. in GCC	
11	The site possession date The site will be handed over within 5 days after issue of LoA/LoI and the site is free from encumbrances.	(21)	
12	The start date shall be 7 days from the date of receipt of the Letter of Acceptance (LoA)/LoI by the Contractor.	(1)	
13	The site is located in PUTHUVYPEEN.		
14	The Defects Liability Period is One year from the date of completion of the work and handing over the site to CoPT	(35)	
15	The minimum insurance cover for physical property, injury and death is Rs.15 lakhs (Rupees Fifteen Lakhs) per occurrence with the number of occurrences unlimited. After each occurrence, Contractor will pay additional premium necessary to make insurance valid always.	(13)	
16	The following events shall also be Compensation Events: (Add the events as applicable to the Contractor) 1. (Nil)	(44)	
17	The period between Programme updates shall be 30 days.	(27)	
18	The amount to be withheld for late submission of an updated Programme shall be Rs.10,000/- .	(27)	
19	The language of the Contract documents is English .	(3)	
20	The law, which applies to the Contract, is the law of Union of India.	(3)	
21	The currency of the Contract is Indian Rupees .	(46)	
22	The maximum amount of liquidated damages for the whole of the works is 10% of the contract price.	[49]	
23	The amounts of the advance payments : Nil	[51]	
	The advance payments as applicable to the contract are:		
	Nature of Advance	Amount (Rs)	Conditions to be fulfilled
	1. Mobilization	Nil	NA
	2. Equipment (Plant and Machinery)	Nil	Nil
24	The date by which “as-built” drawings are required is within 60 days of issue of certificate of completion of whole or section of the work, as the case may be.	(58)	

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5. ANNEXURES

Sl. No.	Annexures	Description	Page No.
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THE LPG IMPORT TERMINAL AT PUTHUVYPEEN”

(ON THE LETTER HEAD OF THE BIDDER)

Date:

To

The Chief Mechanical Engineer,
Cochin Port Trust.

Sir,

Sub : Tender for Contract “PROVIDING HT SUPPLY TO M/S. INDIAN OIL CORPORATION LIMITED FOR THE LPG IMPORT TERMINAL AT PUTHUVYPEEN”

Being duly authorized to represent and act on behalf of
(Hereinafter referred to as “the Bidder”) and having reviewed and fully understood all of the requirements of the bid document and information provided, the undersigned hereby apply for the project referred above.

We are submitting our Bid enclosing the following, with the details as per the requirements of the Bid Document, for your evaluation.

1. Bid Security Declaration
2. Cost of tender document/Processing fee
3. Power of attorney

Signature
(Authorised Signatory)

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PROFORMA OF POWER- OF-ATTORNEY/LETTER OF AUTHORITY
(To be submitted on Non-judicial Stamp Paper of appropriate value)

To
The Chief Mechanical Engineer,
Cochin Port Trust,
Cochin 682009.
Kerala, India.

Dear Sir,

We _____
do hereby confirm that Mr./Ms./Messrs _____ **[INSERT**
NAME AND ADDRESS], whose signature is given below, is /are authorized to
represent us to bid, negotiate and conclude the agreement on our behalf with you against
Tender for Contract “PROVIDING HT SUPPLY TO M/S. INDIAN OIL CORPORATION
LIMITED FOR THE LPG IMPORT TERMINAL AT PUTHUVYPEEN” **(Tender No.F2/T-**
22/HT Supply-IOCL LPG-Puthuvype/2020-M).

We confirm that we shall be bound by all and whatsoever our said agents shall commit.

Signature of the authorized person :

Name & Designation :

Yours faithfully,

Signature, name and seal of the certifying authority

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ORGANIZATION DETAILS

CONTRACT No.:

NAME OF APPLICANT:

1. Name of the Owner:
2. Address:
Telephone No. :

Fax No.
e-mail id:
3. Description of Applicant
(for e.g. A or B grade electrical contractor etc.)
4. Registration and Classification
of Contractors
5. Name and address of bankers
6. Number of years of experience
as a contractor :-

In own Country:

Internationally:
7. Name and Address of partners or
associated companies to be involved
in the project and whether Parent/
Subsidiary/other
8. Name and address of any associates
knowledgeable in the procedures
of customs, immigration and local
experience in various aspect of the
project etc.

9. Name and address of the companies/
Sub-contractors who will be involved
in the execution of works, namely:
10. Name and address of companies who
will be involved in the supply of
bought out items
12. Attach organization chart showing the structure
of the company including names of Directors/
Key Personnel at Head Office who would be
responsible for the project and a separate chart
showing proposed Site Construction Organisation.

Signature
(Authorised Signatory)

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Tenderer shall furnish Details of “eligibility works experience” as per Clause 12 of Minimum Eligible Criteria (MEC) of Instruction to Tenderer and certificates in the following format (Client Certificates/work completion certificates or any other documentary evidences with respect to the eligibility work)

ELIGIBLE ASSIGNMENT DETAILS FOR MQC

Assignment Number :

Description	Bidder to fill up the details here
Name and Address of the Client	
Title of the Eligible Assignment	
Date of completion of the Eligible Assignment	
Project Completion Cost	
Reference No. of the enclosed Client Completion Certificate/ Documentary Evidence for having successfully completed the Eligible assignment	
Name, telephone no, telefax no and email address of the client’s representative	
Description and Scope of Work	

Instructions:

- i) Bidders are expected to provide information in respect of Eligible Assignments in this Section. The assignments cited must comply with the criteria specified Clause No. 12(a) Minimum eligibility of the Instructions to Tenderers”.
- ii) A separate sheet should be filled for each of the eligible assignments.
- iii) The details are to be supplemented by documentary proof from the respective client /owner for having carried out such assignment duly certified by clients/ owner.
- iv) **The works indicated in this Annexure- 4 will be only being considered for evaluation. Mere submission of work completion certificate will not be considered as Eligible Assignments.**
- v) Original or notary certified copy of completion certificates of each work issued by the owner/ the responsible officers of the owner under whom he has executed such contracts shall be attached. The certificate shall invariably contain the following among other things.

- a) Details of work involved specifying the nature of work
 - b) The completion cost of the work and
 - c) Date of commencement ; and
 - d) Date of completion of the work.
- vi) If the experience in similar works is as a member of joint venture, notary attested copy of joint venture agreement in this respect shall be attached.
- vii) If the experience in similar works is as a subcontractor, notary attested copy(s) of approval issued by the Employer(s) authorizing as a sub-contractor; in proof of the claim of the tenderer as a sub-contractor shall be attached.
- viii) If the experience in similar work is in works executed in private sectors/organisations, the TDS certificate along with notary attested copy(s) work order and completion certificate.
- ix) The tenderer is also obliged to produce the original of the certified copy(s) on request by the department.

Signature
(Authorised Signatory)

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DETAILS OF PAST EXPERIENCE OF CONTRACTORS FOR SIMILAR
WORKS

Sl. No.	Name & Location of Project	Owner’s Complete address including TeleFax No. with contact Person	Value of Contract	Duration of Contract			Details of work including major items of work involved	Reference No. & Date of letter of intent & completion certificate enclosed
				Commencement date	Scheduled completion date	Actual completion date		
1	2	3	4	5	6	7	8	9

Note: Bidder to enclose completion certificate issued by owner, certified by a Notary public or equivalent certifying authority.

SIGNATURE OF TENDERER

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FINANCIAL CAPABILITY

(A) Average Annual Turnover of the Bidder

Turnover (Rs.)			
Year 1	Year 2	Year 3	Average
2018-19	2017-18	2016-17	

Instructions:

- (i). The Bidder shall provide audited Annual Reports / Audited financial statements such as balance sheets and profit & loss account statements as required under this Bid Document.
- (ii). Annual turnover of the bidder shall be submitted duly verified by Chartered Accountant or Competent Authority.

Certified by Chartered Accountant

Signature
(Authorised Signatory)

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DETAILS OF PROPOSED APPROACH & METHODOLOGY

Bidder shall furnish a detailed method statement (Technical Note) for carrying out of the works, along with a construction programme [Preferably in MS project / Primavera] showing sequence of operation and the time frame for various segments of temporary and permanent works.

Signature
(Authorised Signatory)

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PLANT AND EQUIPMENT PROPOSED FOR THE WORK

Not Applicable

Signature
(Authorised Signatory)

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We M/s (Name & address of the bidder) hereby declare that:-

1. All details regarding construction plant, temporary work and personnel for site organisation considered necessary and sufficient for the work have been furnished in the Annexure 7 and that such plant, temporary works and personnel for site organisation will be available at the site till the completion of the respective work.
2. No conditions are incorporated in the financial bid. In case any conditions are specified in the financial bid, the tender will be rejected summarily without making any further reference to the bidder.
3. We have not made any payment or illegal gratification to any persons/ authority connected with the bid process so as to influence the bid process and have not committed any offence under PC Act in connection with the bid.
4. We disclose with that we have * made / not made payments or propose to be made to any intermediaries (agents) etc in connection with the bid.
5. We do hereby confirm that no changes have been made in the tender document downloaded and submitted by us for the above bid. Port Tender document will be treated as authentic tender and if any discrepancy is noticed at any stage between the Port's tender document and the one submitted by the tenderer, the Port's document shall prevail.

Signature
(Authorised Signatory)

*** Note: Delete whichever is not applicable.**

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DETAILS OF THE PARTY OPTING FOR REFUND OF EMD THROUGH
E-PAYMENT SYSTEM

Name of the Party :
Bank A/c No :
Account type : (Savings / Current / Overdraft)
Bank Name :
Branch :
IFSC Code Number : (11 digit code)
Centre (Location) :
FAX No. :
E-Mail ID : (For forwarding information of remittance)
Mobile No :

Signature
(Authorised Signatory)

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FORMAT FOR FURNISHING BANK INFORMATION FOR e-PAYMENT

1	Name and full address of the beneficiary	
2	Credit Account No. (Should be full 14 digit)	
3	Account Type (SB or CA or OD)	
4	Name of the Bank	
5	Branch (Full address with telephone No.)	
6	MICR code (Should be 9 digit)	
7	Telephone/Mobile/Fax No. of the beneficiary	Telephone : Mobile : Fax :
8	Cancelled Cheque	

Signature with seal
(Authorised Signatory)

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PROFORMA OF PRE CONTRACT INTEGRITY PACT

General

~~This pre bid pre contract Agreement (hereinafter called the Integrity Pact) is made on _____ day of the month of _____ 20__, between, on one hand, the Board of Trustees of Cochin Port Trust acting through Shri. _____, (Designation of the Officer), Cochin Port Trust (hereinafter called the 'BUYER/EMPLOYER', which expression shall mean and include, unless the context otherwise requires, his successors in office and assigns) of the First Part and M/s. _____ represented by Shri. _____, Chief Executive Officer (hereinafter called the "BIDDER/SELLER" which expression shall mean and include, unless the context otherwise requires, his successors and permitted assigns) of the Second Part.~~

~~WHEREAS the 'BUYER/ EMPLOYER' has invited bids for the project of “PROVIDING HT SUPPLY TO M/S. INDIAN OIL CORPORATION LIMITED FOR THE LPG IMPORT TERMINAL AT PUTHUVYPEEN” (hereinafter referred to as the “Project”) and the BIDDER/SELLER is submitting his bid for the project and~~

~~WHEREAS the BIDDER is a Private Limited company/Public Limited company/Government undertaking/registered partnership firm/ constituted in accordance with the relevant law in the matter and the 'BUYER/ EMPLOYER' is Cochin Port Trust.~~

~~NOW, THEREFORE,~~

~~To avoid all forms of corruption by following a system that is fair, transparent and free from any influence/prejudiced dealings prior to, during and subsequent to the currency of the contract to be entered into with a view to:-~~

~~Enabling BIDDERS to abstain from bribing or indulging in any corrupt practice in order to secure the contract by providing assurance to them that their competitors will also abstain from bribing and other corrupt practices and the 'BUYER/ EMPLOYER' will commit to prevent corruption, in any form, by its officials by following transparent procedures.~~

~~The parties hereto hereby agree to enter into this Integrity Pact and agree as follows:~~

~~**Commitments of the 'BUYER/ EMPLOYER'**~~

~~1.1 The 'BUYER/ EMPLOYER' undertakes that no official of the 'BUYER/EMPLOYER', connected directly or indirectly with the contract, will demand, take a promise for or accept, directly or through intermediaries, any bribe, consideration, gift, reward, favour or any material or immaterial benefit or any other advantage from the~~

~~BIDDER, either for themselves or for any person, organisation or third party related to the contract in exchange for an advantage in the bidding process, bid evaluation, contracting or implementation process related to the contract.~~

~~1.2 The 'BUYER/ EMPLOYER' will, during the pre-contract stage, treat all BIDDERS alike and will provide to all BIDDERS the same information and will not provide any such information to any particular BIDDER which could afford an advantage to that particular BIDDER in comparison to other BIDDERS~~

~~1.3 All the officials of the 'BUYER/ EMPLOYER' will report to the appropriate Government office any attempted or completed breaches of the above commitments as well as any substantial suspicion of such a breach.~~

~~2. In case any such preceding misconduct on the part of such official(s) is reported by the BIDDER to the 'BUYER/ EMPLOYER' with full and verifiable facts and the same is prima facie found to be correct by the 'BUYER/ EMPLOYER' necessary disciplinary proceedings, or any other action as deemed fit, including criminal proceedings may be initiated by the 'BUYER/ EMPLOYER' and such a person shall be debarred from further dealings related to the contract process. In such a case while an enquiry is being conducted by the 'BUYER/ EMPLOYER' the proceedings under the contract would not be stalled.~~

Commitments of BIDDERS

~~3. The BIDDER commits itself to take all measures necessary to prevent corrupt practices, unfair means and illegal activities during any stage of its bid or during any pre contract or post contract stage in order to secure the contract or in furtherance to secure it and in particular commit itself to the following:-~~

~~3.1 The BIDDER will not offer, directly or through intermediaries, any bribe, gift, consideration, reward, favour, any material or immaterial benefit or other advantage, commission, fees, brokerage or inducement to any official of the 'BUYER/ EMPLOYER' connected directly or indirectly with the bidding process, or to any person, organisation or third party related to the contract in exchange for any advantage in the bidding, evaluation, contracting and implementation of the contract.~~

~~3.2 The BIDDER further undertakes that it has not given, offered or promised to give, directly or indirectly any bribe, gift, consideration, reward, favour, any material or immaterial benefit or other advantage, commission, fees, brokerage or inducement to any official of the 'BUYER/ EMPLOYER' or otherwise in procuring the Contract or forbearing to do or having done any act in relation to the obtaining or execution of the contract or any other contract with the Government for showing or forbearing to show favour or disfavour to any person in relation to the contract or any other contract with the Government.~~

~~3.3* BIDDERS shall disclose the name and address of agents and representatives and Indian BIDDERS shall disclose their foreign principals or associates.~~

~~3.4* BIDDERS shall disclose the payments to be made by them to agents/brokers or any other intermediary, in connection with this bid/contract.~~

~~3.5* The BIDDER further confirms and declares to the 'BUYER/ EMPLOYER'~~

~~that the BIDDER has not engaged any individual or firm or company whether Indian or foreign to intercede, facilitate or in any way to recommend to the BUYER or any of its functionaries, whether officially or unofficially to the award of the contract to the BIDDER, nor has any amount been paid, promised or intended to be paid to any such individual, firm or company in respect of any such intercession, facilitation or recommendation.~~

- ~~3.6 The BIDDER, either while presenting the bid or during pre contract negotiations or before signing the contract, shall disclose any payments he has made, is committed to or intends to make to officials of the 'BUYER/ EMPLOYER' or their family members, agents, brokers or any other intermediaries in connection with the contract and the details of services agreed upon for such payments.~~
- ~~3.7 The BIDDER will not collude with other parties interested in the contract to impair the transparency, fairness and progress of the bidding process, bid evaluation, contracting and implementation of the contract.~~
- ~~3.8 The BIDDER will not accept any advantage in exchange for any corrupt practice, unfair means and illegal activities.~~
- ~~3.9 The BIDDER shall not use improperly, for purposes of competition or personal gain, or pass on to others, any information provided by the 'BUYER/ EMPLOYER' as part of the business relationship, regarding plans, technical proposals and business details, including information contained in any electronic data carrier. The BIDDER also undertakes to exercise due and adequate care lest any such information is divulged.~~
- ~~3.10 The BIDDER commits to refrain from giving any complaint directly or through any other manner without supporting it with full and verifiable facts.~~
- ~~3.11 The BIDDER shall not instigate or cause to instigate any third person to commit any of the actions mentioned above.~~
- ~~3.12 If the BIDDER or any employee of the BIDDER or any person acting on behalf of the BIDDER, either directly or indirectly, is a relative of any of the officers of the 'BUYER/ EMPLOYER' or alternatively, if any relative of an officer of the 'BUYER/ EMPLOYER' has financial interest/stake in the bidder's firm, the same shall be disclosed by the BIDDER at the time of filing of tender.
The term 'relative' for this purpose would be as defined in Section 6 of the Companies Act 1956.~~
- ~~3.13 The BIDDER shall not lend to or borrow any money from or enter into any monetary dealings or transactions, directly or indirectly, with any employee of the 'BUYER/ EMPLOYER'.~~

~~4. Previous Transgression~~

- ~~4.1 The BIDDER declares that no previous transgression occurred in the last three years immediately before signing of this Integrity Pact, with any other company in any country in respect of any corrupt practices envisaged hereunder or with any Public Sector Enterprise in India or any Government Department in India that could justify bidder's exclusion from the tender process.~~
- ~~4.2 The BIDDER agrees that if it makes incorrect statement on this subject, BIDDER can be disqualified from the tender process or the contract, if already awarded, can be terminated for such reason.~~

5. Earnest Money (Security Deposit)

5.1 While submitting commercial bid, the BIDDER shall deposit an amount _____ (to be specified in Bid Document) as Earnest Money, with the 'BUYER/ EMPLOYER' through any of the following instruments:

(i) Bank Draft or a Pay Order in favour of _____

(ii) Any other mode or through any other instrument (to be specified in the Bid Document).

5.2 The Earnest Money shall be valid upto a period of 180 days from the Bid Due Date.

5.3 In case of the successful BIDDER, a Performance Guarantee in the form of Bank Guarantee valid till 30 days after the end of defect liability period will also be furnished to the BUYER/ EMPLOYER 'within 21 days of Letter of Acceptance of the Bid by the 'BUYER/ EMPLOYER'.

5.4 In case of the successful BIDDER, a clause would also be incorporated in the Article pertaining to Performance Security in the Project Contract that the provisions of Sanctions for Violation shall be applicable for forfeiture of Performance Security in case of a decision by the BUYER/ EMPLOYER to forfeit the same without assigning any reason for imposing sanction for violation of this Pact.

5.5 No interest shall be payable by the 'BUYER/ EMPLOYER' to the BIDDER on Earnest Money/Security Deposit for the period of its currency.

6. Sanctions for Violations

6.1 Any breach of the aforesaid provisions by the BIDDER or any one employed by it or acting on its behalf (whether with or without the knowledge of the BIDDER) shall entitle the 'BUYER/ EMPLOYER' to take all or any one of the following actions, wherever required:-

(i) To immediately call off the pre contract negotiations without assigning any reason or giving any compensation to the BIDDER. However, the proceedings with the other BIDDER(s) would continue.

(ii) The Earnest Money Deposit (in pre contract stage) and/or Security Deposit/Performance Bond (after the contract is signed) shall stand forfeited either fully or partially, as decided by the 'BUYER/ EMPLOYER' and the 'BUYER/ EMPLOYER' shall not be required to assign any reason therefore.

(iii) To immediately cancel the contract, if already signed, without giving any compensation to the BIDDER.

(iv) To cancel all or any other Contracts with the BIDDER. The BIDDER shall, be liable to pay compensation for any loss or damage to the 'BUYER/ EMPLOYER' resulting from such cancellation/rescission and the 'BUYER/ EMPLOYER' shall be entitled to deduct the amount so payable from the money(s) due to the BIDDER.

(v) To debar the BIDDER from participating in future bidding processes of the Government of India for a minimum period of five years, which may be further extended at the discretion of the 'BUYER/ EMPLOYER'

(vi) To recover all sums paid in violation of this Pact by BIDDER(s) to any middleman or agent or broker with a view to securing the contract.

(vii) Forfeiture of Performance Guarantee in case of a decision by the 'BUYER/ EMPLOYER' to forfeit the same without assigning any reason for imposing sanction for violation of this Pact.

~~6.2 — The 'BUYER/ EMPLOYER' will be entitled to take all or any of the actions mentioned at para 6.1(i) to (vii) of this Pact also on the Commission by the BIDDER or any one employed by it or acting on its behalf (whether with or without the knowledge of the BIDDER), of an offence as defined in Chapter IX of the Indian Penal code, 1860 or Prevention of Corruption Act, 1988 or any other statute enacted for prevention of corruption.~~

~~6.3 — The decision of the 'BUYER/ EMPLOYER' to the effect that a breach of the provisions of this Pact has been committed by the BIDDER shall be final and conclusive on the BIDDER. However, the BIDDER can approach the Independent Monitor(s) appointed for the purposes of this Pact.~~

~~7. — Fall Clause~~

~~7.1 — The BIDDER undertakes that it has not performed/is not performing similar project at a price lower than that offered in the present bid in respect of any other Ministry/Department of the Government of India or PSU and if it is found at any stage that similar project was performed by the BIDDER to any other Ministry/Department of the Government of India or a PSU at a lower price, then that very price, with due allowance for elapsed time, will be applicable to the present case and the difference in the cost would be refunded by the BIDDER to the 'BUYER/ EMPLOYER', if the contract has already been concluded.~~

~~8. — Independent Monitors~~

~~8.1 — The 'BUYER/ EMPLOYER' has appointed the following Independent Monitors (hereinafter referred to as Monitors) for this Pact in consultation with the Central Vigilance Commission-~~

~~Sri. K.K. Vijayakumar, IAS (Retd.)
Kalarikkal, KRA – 33,
Kunnumpuram Civil Station Road,
Kakkanad, Cochin – 682030~~

~~8.2 — The task of the Monitors shall be to review independently and objectively, whether and to what extent the parties comply with the obligations under this Pact.~~

~~8.3 — The Monitors shall not be subject to instructions by the representatives of the parties and perform their functions neutrally and independently.~~

~~8.4 — Both the parties accept that the Monitors have the right to access all the documents relating to the project/bidding, including minutes of meetings.~~

~~8.5 — As soon as the Monitor notices, or has reason to believe, a violation of this Pact, he will so inform the Authority designated by the BUYER/ EMPLOYER,~~

~~8.6 — The BIDDER(s) accepts that the Monitor has the right to access without restriction to all Project documentation of the BUYER/ EMPLOYER, including that provided by the BIDDER. The BIDDER will also grant the Monitor, upon his request and demonstration of a valid interest, unrestricted and unconditional access to his project documentation. The same is applicable to Subcontractors. The Monitor shall be under contractual obligation to treat the information and documents of the BIDDER/Subcontractor(s) with confidentiality.~~

~~8.7 — The BUYER/ EMPLOYER, will provide to the Monitor sufficient information about all meetings among the parties related to the Project provided such meetings could have an impact on the contractual relations between the parties. The parties will offer to the Monitor the option to participate in such meetings.~~

~~8.8 — The Monitor will submit a written report to the designated Authority of BUYER/~~

~~EMPLOYER within 8 to 10 weeks from the date of reference or intimation to him by the BUYER/ EMPLOYER/ BIDDER and, should the occasion arise, submit proposals for correcting problematic situations.~~

9. ~~Facilitation of Investigation~~

~~In case of any allegation of violation of any provisions of this pact or payment of commission, the BUYER/ EMPLOYER or its agencies shall be entitled to examine all the documents including the Books of Accounts of the BIDDER and the BIDDER shall provide necessary information and documents in English and shall extend all possible help for the purpose of such examination.~~

10. ~~Law and Place of Jurisdiction~~

~~This Pact is subject to Indian Law.' The place of performance and jurisdiction is the seat of the BUYER/ EMPLOYER~~

11. ~~Other Legal Actions~~

~~The actions stipulated in this Integrity Pact are without prejudice to any other legal action that may follow in accordance with the provisions of the extant law in force relating to any civil or criminal proceedings.~~

12. ~~Validity~~

~~12.1 The validity of this Integrity Pact shall be from date of its signing and extend upto 5 years or the complete execution of the contract to the satisfaction of both the BUYER/ EMPLOYER and the BIDDER/SELLER, including warranty period, whichever is later. In case BIDDER is unsuccessful, this Integrity Pact shall expire after six months from the date of the signing of the contract.~~

~~12.2 Should one or several provisions of this Pact turn out to be invalid; the remainder of this Pact shall remain valid. In this case, the parties will strive to come to an agreement to their original intentions.~~

~~13. The parties hereby sign this Integrity Pact at _____ on _____~~

~~BUYER/ EMPLOYER _____ BIDDER~~

~~Name of the Officer. _____ CHIEF EXECUTIVE OFFICER~~

~~Designation~~

~~Deptt./MINISTRY/PSU~~

~~Witness _____ Witness~~

~~1. _____ 1. _____~~

~~2. _____ 2. _____,~~

~~* Provisions of these clauses would need to be amended/ deleted in line with the policy of the BUYER/ EMPLOYER in regard to involvement of Indian agents of foreign bidders.~~

SECTION -I
COCHIN PORT TRUST
MECHANICAL ENGINEERING DEPARTMENT
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“PROVIDING HT SUPPLY TO M/S. INDIAN OIL CORPORATION LIMITED FOR
THE LPG IMPORT TERMINAL AT PUTHUVYPEEN”

FORMAT OF DECLARATION IN LIEU OF EMD/BID SECURITY
(To be submitted on the Bidder’s Letter Head)

I/We(Insert Name and Address of Bidder) am/are submitting this declaration in lieu of Bid Security/Earnest Money Deposit for the Tender for(Insert Title of the Tender) (Tender No.....), thereby fully accepting that I/We will be suspended and shall not be eligible to participate in the Tenders invited by Cochin Port Trust, for a period of Two years from the date of such Suspension Orders, under the following circumstances:-

- a) If after the opening of Tender, I/We withdraw or modify my/our Tender during the period of validity specified in the Bid Documents (including extended validity, if any) or do not accept the correction of the Tender Price pursuant to any arithmetical errors.
- b) If after the award of work, I/We fail to furnish the required Performance Security or sign the Contract, within the time limits specified in the Departmental Tender Document.

Signature of the Tenderer with seal

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PROFORMA OF JOINT VENTURE/CONSORTIUM AGREEMENT

(To be submitted on Non-judicial Stamp Paper of appropriate value)

This Joint Venture /Consortium Agreement is made and entered into on this day of2021 by and between (i) M/s. ...**(Name of the firm to be filled in)**....., (ii) M/s.....**(Name of the firm to be filled in)**.....,, primarily for the work under the Cochin Port Trust.

All the partners of the Joint Venture /Consortium hereinafter individually referred to as the parties and collectively as the ‘Joint Venture/Consortium’.

1.0 Formation of Joint Venture/Consortium

1.1. (i) M/s.....**(Name of the firm to be filled in)** is engaged in**(Details of the works undertaken by the party)**

(ii) M/s..... **(Name of the firm to be filled in)** is engaged in**(Details of the works undertaken by the party)**

(iii)

1.2. On behalf of Board of Trustees of Port of Cochin (hereinafter referred to as “Employer”), the Chief Mechanical Engineer, Cochin Port Trust has invited bids from the experienced, resourceful and bonafide Developers with proven technical and financial capabilities of executing the work of (herein after referred as “the project”).

1.3. The parties have been exploring together the ways and means of collaboration for the purpose of an offer to be made for the said project of the Cochin Port Trust and have mutually agreed to enter into a Joint Venture/Consortium Agreement to submit a common bid for the project and to carry out the project works in the event of award of the contract, in association with each other and (**.....Name of Partner to be filled in.....**) shall be the Lead Partner and (i) (**.....Name of Partner to be filled in.....**), (ii) (**.....Name of Partner to be filled in.....**),..... shall be the other partner(s).

NOW THEREFORE IT HAS BEEN AGREED TO BETWEEN THE PARTIES AS FOLLOWS

1.4. The Joint Venture/Consortium will be known as...(**.....Name of JV to be filled in.....**)and shall consist of (i) (**.....Name of the firm to be filled in.....**), (ii) (**.....Name of the firm to be filled in.....**),, parties to the present agreement.

1.5. The recitals are true and correct and form an integral part of this agreement and are representations of the parties to which they relate and have been relied upon by the parties to enter into the present agreement.

1.6. Notwithstanding the date of signature of this agreement, its effective date will be the date of submission of bid.

- 1.7. All costs incurred by the parties before the date of award of contract will be borne by the parties concerned. All costs in implementation of this Joint Venture/Consortium Agreement after award of contract till the expiry of this agreement will be borne by the parties as hereinafter provided.
- 1.8. The Joint Venture/Consortium will be dissolved and this agreement will cease to have effect on completion of this project, maintenance and fulfilment of all other conditions under the contract, upon receipt of payment of all amounts from the Employer and on settlement of accounts between the parties as hereinafter provided.
- 1.9. The contract, if awarded by the Employer, Letter of Acceptance shall be issued in the name of (...**Name of JV/Consortium to be filled in**....) and the Contract shall be signed by legally authorised signatories of all the parties.
- 1.10. All the parties of the JV/Consortium shall be jointly and severally liable during the bidding process and the bid document shall be signed by legally authorised signatory of all the parties.
- 1.11. The financial contribution of each partner to the JV/Consortium operation shall be:
- (i) M/s..... (**Name of the partner to be filled in**) -
 - (ii) M/s..... (**Name of the partner to be filled in**) -
 - (iii)
- 1.12. All the parties of the JV/Consortium shall be jointly and severally liable for the execution of the project in accordance with the Contract terms, in the event of award of contract. The delineation of duties, responsibilities and scope of work shall be:
- a) The Lead Partner, shall provide suitable experienced personnel at site, for general planning, site management and equipment operations, during entire period of contract execution.
 - b) (.....**Name of Partner to be filled in**.....) shall carry out the following works

 - c) (.....**Name of Partner to be filled in**.....) shall carry out the following works
 - d)
- 1.13. The parties hereto agreed that each of them shall duly and properly perform all the functions and all costs related to their respective works.
- 1.14. The parties hereto shall be at liberty to enter into liaison work/correspondence with statutory and local authorities as the circumstances warrant individually or collectively.
- 1.15. It is hereby agreed and undertaken that, all the parties are jointly and severally liable to the “Board” of Port of Cochin for the performance of the contract.
- 1.16. Notwithstanding demarcation or allotment of work between JV/Consortium partners, JV/Consortium each partner shall be liable for non performance of the whole contract irrespective of their demarcation or share of work.
- 1.16. The Lead Partner shall be authorised to act on behalf of the JV/Consortium.

- 1.17. All the correspondences between the Employer and the JV /Consortium shall be routed through the Lead Partner.
- 1.18. The Lead Partner is authorized: (a) to submit bid, negotiate and conclude contract and incur all liabilities therewith on behalf of the partner(s) of the JV /Consortium during the bidding process; and (b) in the event of a successful bid, to incur liabilities and receive instructions for and on behalf of the partner(s) of the JV /Consortium and to carry out the entire execution of the contract including payment, exclusively through Lead Partner.
- 1.19. In the event of default of the Lead Partner, it shall be construed as default of the Developer/Contractor; and Employer shall be entitled to take action under relevant clause(s) of the Department Bid Document and/or Conditions of Contract.
- 1.20. All the parties of the JV/Consortium shall be jointly and severally liable for due performance, recourse/sanctions within the joint venture in the event of default of any partner and arrangements for providing the required indemnities.
- 1.21 The JV/ Consortium shall have a separate JV/Consortium Bank account (distinct from the Bank account of the individual partners) to which individual partners shall contribute their share capital / or working capital. The financial obligation of the consortium shall be discharged through the said JV/ Consortium Bank account only and also all payment received by consortium from the Cochin Port Trust shall be through that account only.

The parties hereto have mutually agreed to the terms and conditions set forth herein above and have assured each other to duly perform the reciprocal promises and obligations on either side for effective implementation of the JV/Consortium for proper and due completion of the works envisaged, in the event of award of contract to the JV/Consortium and have affixed their signature in this indenture on this theday of20...

(i) Signature
 Name
 Designation seal
 &
 Common seal of the firm

(ii) Signature
 Name
 Designation seal
 &
 Common seal of the firm

Witness 1
 Witness 2

**PROFORMA OF POWER- OF-ATTORNEY FOR LEAD MEMBER OF JV/
CONSORTIUM (NA)**

((To be submitted on Non-judicial Stamp Paper of appropriate value))

By this Power- of-Attorney executed on thisday of(month) of 2021, we,

(i) (.....Name of legally authorized signatory of first partner to be filled in.....), (ii) (.....Name of legally authorized signatory of second partner to be filled in.....),
..... hereby jointly authorize and agree the Lead Partner, M/s (.....Name of the lead partner to be filled in.....), (a) to submit bid, negotiate and conclude contract and incur all liabilities therewith on behalf of the partner(s) of the JV /Consortium during the bidding process; and (b) in the event of a successful bid, to incur liabilities and receive instructions for and on behalf of the partner(s) of the JV /Consortium and to carry out the entire execution of the contract including payment for the work of “ exclusively through Lead Partner.

(i) Signature
Name
Designation seal
&
Common seal of the firm

(ii) Signature
Name
Designation seal
&
Common seal of the firm

.....
.....

Signature, name and seal of the certifying authority/Notary Public

SECTION -I
COCHIN PORT TRUST
MECHANICAL ENGINEERING DEPARTMENT
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THE LPG IMPORT TERMINAL AT PUTHUVYPEEN”

PROFORMA OF IRREVOCABLE BANK GUARANTEE FOR PERFORMANCE
OF GUARANTEE

(To be submitted on Non-judicial Stamp Paper of appropriate value)

Ref: Bank Guarantee No _____

Date _____

To

Cochin Port Trust
W/Island,
Cochin 682009.

Dear Sirs,

In consideration of Board of Trustees of Port of Cochin (hereinafter referred to as the ‘Port Trust’ which expression unless repugnant to the context or meaning thereof includes its successors, administrators and assigns) having awarded to M/s _____ with its Registered / Head Office at _____ (hereinafter referred to as the “CONTRACTOR” which expression shall unless repugnant to the context or meaning thereof, include its successor, administrators, executors and assigns), a “CONTRACT” by issue of Port Trust’s work order dated _____ the same having been unequivocally accepted by the Contractor resulting in a “CONTRACT” bearing No. _____ dated _____ value at _____ for _____ and the CONTRACTOR having agreed to provide a Contract Performance Guarantee for the faithful performance of the entire Contract equivalent to _____, to Port Trust under the terms and conditions of an agreement between Board of Trustees of Port of Cochin and For the execution of the work (hereinafter called “the said agreement”) .

3. 2. We _____
having _____ its _____ Head _____ office
at _____ (hereinafter referred to as
the “Bank”, which expression shall unless repugnant to the context or meaning thereof,
include its successors, administrators, executors and assigns) do hereby guarantee and
undertake to pay the Port Trust on demand any and all money payable by the Contractor to
the extent of _____ as aforesaid at any time
upto _____ without any demur, reservation,
contest, recourse or protest and/or without any reference to the CONTRACTOR. Any such
demand made by the Port Trust on the Bank shall be conclusive and binding
notwithstanding any difference between Port Trust and CONTRACTOR. We,

_____ Bank Ltd., do hereby undertake to pay to the Port Trust any money without demur so demanded notwithstanding any dispute or disputes raised by the contractor(s) in any suit or proceeding pending before any court or Tribunal relating thereto, our liability under this present being absolute and unequivocal. The payment so made by us under this bond shall be a valid discharge of our liability for payment there under and the contractor(s) shall have no claim against us for making such payment.

4. We, _____ Bank Ltd., further agree that the guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance of the said Agreement and that it shall continue to be enforceable till all the dues of the Port Trust under or by virtue of the said Agreement have been fully paid and its claim satisfied or discharged or till Engineer-in-charge on behalf of the Port Trust certifies that the terms and conditions of the said Agreement have been fully and properly carried out by the said contractor(s) and accordingly discharges this guarantee.

5. We, _____ Bank Ltd., further agrees with the Port Trust that the Port Trust shall have the fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the said Agreement or to extend time of performance by the said contractor(s) from time to time or to postpone for any time or from time to time any of the powers exercisable by the Port Trust against the said contractor(s) and to forebear or enforce any of the terms and conditions relating to the said Agreement and we shall not be relieved from our liability by reason of any such variation, or extension being granted to the said contractor(s) or by any such matter or things whatsoever which under the law relating to sureties would but for this provision, have effect of so relieving us.

6. This guarantee will not be discharged due to the change in the constitution of the Bank or the contractor(s).

7. We, _____ Bank Ltd., lastly undertake not to revoke this guarantee except with the previous consent of the Port Trust in writing and further agrees that the guarantee herein contained shall continue to be in endorseable till the Port Trust discharges its guarantee.

8. We, _____ Bank Ltd. also agrees that Port Trust at its option shall be entitled to enforce this Guarantee against the Bank as principal debtor, in the first instance without proceeding against CONTRACTOR and notwithstanding any security or other guarantee that Port Trust may have in relation to the CONTRACTOR's liabilities.

9. This guarantee shall be valid upto _____ unless extended on demand by Port Trust. Notwithstanding anything mentioned above, our liability against this guarantee is restricted to Rs _____ (Rupees _____ only) and unless a claim in writing is lodged with us within six months of the date of expiry of or the extended date of expiry of this guarantee all our liabilities under this guarantee shall stand discharged.

Dated the _____ day of _____ 20 .

WITNESSES

(Signature)

(Name)

(Signature)

(Name)

Bank's Rubber Stamp

(Name)

(Name)

(Official address)

(Designation with Bank Stamp)

Attorney as per Power of Attorney

No. _____

Dated _____

SECTION II

SECTION -II
COCHIN PORT TRUST
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MECHANICAL ENGINEERING DEPARTMENT
Tender No: **F2/T-22/HT Supply-IOCL LPG-Puthuvype/2020-M**
“PROVIDING HT SUPPLY TO M/S. INDIAN OIL CORPORATION LIMITED FOR
THE LPG IMPORT TERMINAL AT PUTHUVYPEEN”

GENERAL CONDITIONS OF CONTRACT

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GENERAL GUIDELINES

1. This book of “General Conditions of Contract (GCC)“ is applicable to both types of tenders i.e. “ Percentage rate tenders and item rate tenders”.
2. This GCC is applicable to Civil, Electrical and Mechanical works, except dredging work.
3. All blanks are confined to Contract Data. The blanks provided therein shall be filled up carefully for each tender as applicable.
4. Authority approving the Notice Inviting Tenders(NIT) shall fill up all the blanks in Contract Data before issue of tender document.
5. Additional clauses or modifications to the clauses in the GCC, as applicable specifically to the work shall be incorporated under Special Conditions of Contract.

SECTION II
COCHIN PORT TRUST
No. F2/T-22/HT Supply-IOCL LPG-Puthuvype/2020-M
PROVIDING HT SUPPLY TO M/S. INDIAN OIL CORPORATION LIMITED
FOR THE LPG IMPORT TERMINAL AT PUTHUVYPEEN

1. GENERAL CONDITIONS OF CONTRACT

A. General

1 Definitions

Terms which are defined in the Contract Data are not also defined in the Conditions of Contract but keep their defined meanings. Capital initials are used to identify defined terms.

Bill of Quantities means the priced and completed Bill of Quantities forming part of the Bid.

Compensation Events are those defined in Clause 44

The **Completion Date** is the date of completion of the Works as certified by the Engineer or his nominee in accordance with Sub Clause 55.1

The **Contract** is the contract between the Employer and the Contractor to execute, complete and maintain the Works. It consists of the documents listed in Clause 2.3 below.

The **Contract Data** defines the documents and other information which comprise the Contract

The **Contractor** is a person or corporate body whose Bid to carry out the Works has been accepted by the Employer.

The **Contractor's Bid** is the completed Bidding documents submitted by the Contractor to the Employer.

The **Contract Price** is the price stated in the letter of acceptance and thereafter as adjusted in accordance with the provisions of the Contract.

Days are calendar days, **months** are calendar months.

A **Defect** is any part of the Works not completed in accordance with the Contract.

The **Defects Liability Period** is the period named in the Contract Data and calculated from the Completion Date.

The **Employer** is the party who will employ the Contractor to carry out the Works.

Equipment is the Contractor's machinery and vehicles brought temporarily to the Site to construct the Works.

The **Initial Contract Price** is the Contract Price listed in the Employer's Letter of Acceptance.

The **Intended Completion Date** is the date on which it is intended that the Contractor shall complete the works. The Intended Completion Date is specified in the Contract Data. The Intended Completion Date may be revised only by the Engineer or his nominee by issuing an extension of time.

Market Rate is the rate as decided by the Engineer on the basis of the cost of materials and labour at the site where the work is to be executed plus 10% to cover all overheads and profits.

Materials are all supplies, including consumables, used by the Contractor for incorporation in the Works.

The **Engineer or his nominee** is the person named in the Contract Data (or any other competent person appointed and notified to the Contractor to act in

replacement of the Engineer or his nominee) who is responsible for supervising the Contractor, administering the Contract, certifying payments due to the Contractor, issuing and valuing Variations to the Contract, awarding extensions of time and valuing the Compensation Events.

Plant is any integral part of the Works which is to have mechanical, electrical, electronic or chemical or biological function.

Ruling Percentage is the percentage by which the tendered amount of the works actually awarded is higher or lower than the corresponding estimated amount of the works actually awarded.

The **Site** is the area defined as such in the Contract Data.

Site Investigation Reports are those which were included in the Bidding documents and are factual interpretative reports about the surface and sub-surface conditions at the site.

Specification means the Specification of the Works included in the Contract and any modification or addition made or approved by the Engineer or his nominee.

The **Start Date** is given in the Contract Data. It is the date when the Contractor shall commence execution of the works. It does not necessarily coincide with any of the Site Possession Date.

A **Sub Contractor** is a person or corporate body who has a Contract with the Contractor to carry out a part of the work in the Contract which includes work on the Site.

Temporary Works are works designed, constructed, installed and removed by the Contractor which are needed for construction or installation of the Works

A **Variation** is an instruction given by the Engineer or his nominee which varies the Original Works.

The **Works** are what the Contract requires the Contractor to construct, install and turn over to the Employer as defined in the Contract Data.

2. Interpretation

- 2.1 In interpreting these Conditions of Contract, singular also means plural, male also means female or neuter and the other way around. Headings have no significance. Words have their normal meaning under the language of the Contract unless specifically defined. The Engineer or his nominee will provide instructions clarifying queries about the Conditions of Contract.
- 2.2 If sectional completion is specified in the Contract Data, references in the Conditions of Contract to the Works, the Completion Date, and the Intended Completion Date apply to any Section of the Works (other than references to the Completion Date and Intended Completion date for the whole of the Works).
- 2.3 The documents forming the Contract shall be interpreted in the following order of priority:
 - (1) Agreement
 - (2) Letter of Acceptance and notice to proceed with works
 - (3) Contractor's Bid
 - (4) Contract Data
 - (5) Conditions of Contract including Special Conditions of Contract
 - (6) Specifications
 - (7) Drawings
 - (8) Bill of quantities and
 - (9) Any other documents listed in the Contract Data as forming part of the Contract.

3 Language and Law

3.1 The language of the Contract and the law governing the Contract are stated in the Contract Data.

4 Engineer or his nominee's Decisions

4.1 Except where otherwise specifically stated, the Engineer or his nominee will decide contractual matters between the Employer and the Contractor in the role representing the Employer.

5 Delegation

5.1 The Engineer or his nominee may delegate any of the duties and responsibilities to other people after notifying the Contractor and may cancel any delegation after notifying the Contractor.

6 Communications

6.1 Communications between parties which are referred to in the conditions are effective only when in writing. A notice shall be effective only when it is delivered (in terms of Indian Contract Act 1872).

7. Contract Agreement

7.1 A suitable form is annexed as "FORM OF AGREEMENT" to the Tender Document. Upon signing the Contract Agreement, the Contractor shall make copies of Contract Documents, as indicated in the Contract Data, in hardbound cover which shall cover documents used in Contract/Agreement and provide the same to the Employer at no extra cost.

7.2 Data made available by the Employer in accordance with provisions of the Condition of Contract shall be deemed to include data listed elsewhere in the Contract and open for inspection at the office of the Engineer as indicated in the Contract data of the Cochin Port Trust (by prior appointment with the Engineer).

8 Subcontracting

8.1 The Contractor may subcontract with the approval of the Engineer or his nominee but may not assign the Contract without the approval of the Employer in writing. Subcontracting does not alter the Contractor's obligations.

Notwithstanding any subcontracting with such approval as required under above and notwithstanding that the Engineer shall have received copies of any sub-contract, the Contractor shall be solely responsible for the quality and proper execution of the works, performance of all conditions of contract in all respects as if such subletting had not taken place and as if such work has been done directly by the Contractor.

If any Sub-Contractor engaged upon the works at the site executes any work, which in the opinion of the Engineer or his nominee is not in accordance with the Contract condition, written notice may be given to the Contractor requesting him to terminate such sub contract and the Contractor, upon receipt of such notice shall terminate such sub contract and the said Sub Contractor shall forthwith leave the works, failing which the Employer shall have right to remove such Sub Contractors from site. No action taken by the Employer under this clause shall relieve the Contractor of any of his liabilities under the contract or give rise to any compensation, extension of time or otherwise.

8.2 Other Contractors

The Contractor shall co-operate and share the site with other Contractors, public authorities, utilities and the Employer between the dates given in the Schedule of other Contractors. The Contractor shall as referred to in the Contract Data, also provide facilities and services for them as described in the Schedule. The Employer may modify the schedule of other Contractors and shall notify the

Contractor of any such modification.

9 Personnel

- 9.1 The Contractor shall employ the key personnel named in the Schedule of Key Personnel as referred to in the Contract Data to carry out the functions stated in the Schedule or other personnel approved by the Engineer or his nominee. The Engineer or his nominee will approve any proposed replacement of key personnel only if their qualifications, abilities, and relevant experience are substantially equal to or better than those of the personnel listed in the schedule.
- 9.2 If the Engineer or his nominee asks the Contractor to remove a person who is a member of the Contractor's staff ~~of~~ from his work force stating the reasons, the Contractor shall ensure that the person leaves the site within seven days and has no further connections with the work in the contract.

10 Employer's and Contractor's Risks

- 10.1 The Employer carries the risks which this Contract states are Employer's risks and the Contractor carries the risks which this Contract states are Contractor's risks.

11 Employer's Risks

- 11.1 The Employers risks are
- (a) Loss or damage due to the use or occupation by the Employer of any Section or part of the Permanent Works, except as may be provided for in the Contract;
 - (b) Loss or damage to the extent that it is due to the design of the Works, other than any part of the design provided by the Contractor or for which the Contractor is responsible; and
 - (c) Any operation of the forces of nature (in so far as it occurs on the Site) which an experienced Contractor:
 - (i) could not have reasonably foreseen, or
 - (ii) could reasonably have foreseen, but against which he could not reasonably have taken at least one of the following measures:
 - (A) prevent loss or damage to physical property from occurring by taking appropriate measures, or
 - (B) insure against.

12 Contractor's Risks

- 12.1 All risks of loss of or damage to physical property and of personal injury and death which arise during and in consequence of the performance of the Contract other than the excepted risks are the responsibility of the Contractor.
- 12.2 Excepted risks are riot (in so far as it is uninsurable) war, invasion, act of foreign enemies, hostilities (whether war be declared or not), civil war, rebellion, revolution, insurrection or military usurped power or a cause solely due to use of occupation by the Employer of any portion of the work, any operation of the forces of nature that the Contractor could not have foreseen or reasonably provided against. (All of such are herein collectively referred to as the excepted risks).

13 Insurance

- 13.1 The Contractor shall provide in the joint names of the Employer and the Contractor, insurance cover from the Start Date to the end of the Defects Liability Period, in the amounts and deductibles stated in the Contract Data for the following events which are due to the Contractors risks.
- a) loss of or damage to the Works, Plant and Materials
 - b) loss of or damage to Equipment;
 - c) loss of or damage of property (except the Works, Plant, Materials and

Equipment) in connection with the Contract; and

d) personal injury or death.

- 13.2 Policies and certificates for insurance shall be delivered by the Contractor to the Engineer or his nominee for approval before the start date. All such insurances shall provide for compensation to be payable in the types and proportions of currencies required to rectify the loss or damage incurred.
- 13.3 If the Contractor does not provide any of the policies and certificates required, the Employer may effect the insurance which the Contractor should have provided and recover the premiums the Employer has paid from any payments due to the Contractor or, if no payment is due, the payment of the premiums shall be a debt due.
- 13.4 Alterations to the terms of insurance shall not be made without the approval of the Engineer or his nominee.
- 13.5 Both parties shall comply with all conditions of the insurance policies.

14 Site Investigation Reports

- 1.1 The Contractor, in preparing the Bid, shall rely on the Site Investigation Report referred to in the Contract Data, supplemented by any information available to the Bidder.

15. Queries about the Contract Data

- 15.1 The Engineer or his nominee will clarify queries on the Contract Data.

16 Contractor to Construct the Works

- 16.1 The Contractor shall construct and install the works in accordance with the Specification and Drawings.
- 16.2 The Contractor shall execute the whole and every part of the work in the most substantial and workmanlike manner both as regards materials and otherwise in every respect in strict accordance with the Specifications. The Contractor shall also conform exactly, fully and faithfully to the design, drawings and instructions in writing in respect of the work signed by the Engineer or his nominee and the Contractor shall be furnished free of charge one copy of the contract documents together with specifications, designs, drawings and instructions as are not included in the Specifications specified in Contract Data or in any Bureau of Indian Standard or any other published standard or code or, Schedule of Rates or any other printed publication referred to elsewhere in the Contract.
- 16.3 The Contractor shall comply with the provisions of the contract and with the care and diligence execute and maintain the works and provide all labour and materials, tools and plants including for measurements and supervision of all works, structural plans and other things of temporary or permanent nature required for such execution and maintenance in so far as the necessity for providing these, is specified or is reasonably inferred from the contract. The Contractor shall take full responsibility for adequacy, suitability and safety of all the works and methods of construction.

17 The Works to be Completed by the Intended Completion Date

- 17.1 The Contractor may commence execution of the works on the Start Date and shall carry out the works in accordance with the program submitted by the Contractor as updated with the approval of the Engineer or his nominee, and complete them by the Intended Completion Date.

18 Approval by the Engineer or his nominee

- 18.1 The Contractor shall submit Specifications and Drawings showing the proposed Temporary Works or Permanent Works, in the case of Contractor's design to the Engineer or his nominee, who is to approve them if they comply with the

specifications and Drawings.

- 18.2 The Contractor shall be responsible for design of Temporary Works.
- 18.3 The Engineer or his nominee's Approval shall not alter the Contractor's responsibility for design of the Temporary Works.
- 18.4 All Drawings prepared by the Contractor for the execution of the temporary works, are subject to prior approval by the Engineer or his nominee before their use.

19 Safety

- 19.1 The Contractor shall be responsible for the safety of all activities on the Site.

20 Discoveries

- 20.1 Anything of historical or other interest or of significant value unexpectedly discovered on the Site is the property of the Employer. The Contractor is to notify the Engineer or his nominee of such discoveries and carry out the Engineer or his nominee's instructions for dealing with them.

21 Possession of the Site

- 21.1 The Employer shall give possession of all parts of the Site to the Contractor, free from encumbrances. If possession of a part is not given by the date stated in the Contract Data the Employer is deemed to have delayed the start of the relevant activities and this will be a Compensation Event.

22 Access to the Site

- 22.1 The Contractor shall allow the Engineer or his nominee and any person authorised by the Engineer or his nominee access to the Site or to any place where work in connection with the Contract is being carried out or is intended to be carried out and to any place where materials or plant are being manufactured, fabricated and /or assembled for the works.

23 Instructions

- 23.1 The Contractor shall carry out all instructions of the Engineer or his nominee which comply with the applicable laws where the Site is located.

24 Disputes

- 24.1 If the Contractor believes that a decision taken by the Engineer or his nominee was either outside the authority given to the Engineer or his nominee by the Contract or that the decision was wrongly taken, the decision shall be referred to the Employer within 28 days of the notification of the Engineer or his nominee's decision.

25. Settlement of Disputes & Arbitration

25.1 General

Except where otherwise provided in the contract all questions and disputes relating to the meaning of the specifications, design, drawings and instructions here-in before mentioned and as to the quality of workmanship or materials used on the work or as to any other question, claim, right, matter or thing whatsoever in any way arising out of or relating to the contract, designs, drawings, specifications, estimates, instructions, orders or these conditions or otherwise concerning the works or the execution or failure to execute the same whether arising during the progress of the work or after the cancellation, termination, completion or abandonment thereof shall be dealt with as mentioned hereinafter:-

If the Contractor considers any work demanded of him to be outside the requirements of the contract, or disputes any drawings, record or decision given in writing by the Engineer on any matter in connection with or arising out of the contract or carrying out of the work, to be unacceptable, he shall promptly within

15 days request the Engineer in writing for written instruction or decision. Thereupon, the Engineer shall give his written instructions or decision within a period of one month from the receipt of the Contractor's letter.

If the Engineer fails to give his instructions or decision in writing within the aforesaid period or if the Contractor is dissatisfied with the instructions or decision of the Engineer, the Contractor may, within 15 days of the receipt of Engineer's decision, appeal to the Chairman who shall afford an opportunity to the Contractor to be heard, if the latter so desires, and to offer evidence in support of his appeal. The Chairman shall give his decision within 30 days of receipt of Contractor's appeal. If the Contractor is dissatisfied with this decision then:

- a) The Dispute in respect of contract of value upto Rs. 1crore shall not be referred for adjudication through arbitration and
- b) If the value of the contract is exceeding Rs. 1 crore and upto Rs.5 crores,
 - (i) The Dispute shall be resolved through arbitration by a sole arbitrator appointed by the Chairman of Cochin Port Trust :
 - (ii) The Contractor shall within a period of 30 days from receipt of the decision of the Chairman, give notice to the Chairman for appointment of arbitrator, failing which, the said decision shall be final, binding and conclusive and not referable to adjudication by the arbitrator.

If the arbitrator so appointed is unable or unwilling to act or resigns his appointment or vacates his office due to any reason whatsoever another sole arbitrator shall be appointed in the manner aforesaid. Such person shall be entitled to proceed with the reference from the stage at which it was left by his predecessor.

- c) If the value of the Contract is above Rs. 5 crores, the Contractor shall within 30 days of receipt of the decision of the Chairman, appoint an arbitrator and give notice to the Chairman and the dispute shall be resolved through Arbitral Tribunal as detailed below:

The Arbitral Tribunal shall be a panel of three arbitrators, one to be appointed by each Party and the third to be appointed by the two Arbitrators appointed by the Parties. A Party requiring Arbitration shall appoint an Arbitrator in writing, inform the other Party about such appointment and call upon the other Party to appoint its Arbitrator. If the other Party fails to appoint its Arbitrator, the Party appointing Arbitrator shall take steps in accordance with Arbitration and Conciliation Act, 1996 or any statutory modifications or reenactment thereof

- d) In case of the dispute or difference is relating to interpretation and application of the provisions of commercial contract between Central Public Sector Enterprises (CPSE), Port Trust inter se or CPSE and Government Department shall be referred by either party for arbitration to the Permanent Machinery of Arbitrators in the Department of Public Enterprises through the Secretary to the Government of Public Enterprises as per the guidelines issued by Department of Public Enterprises OM No.4 (1) 2011- DPE (PMA) – GL dtd. 12.06.2013 or any statutory amendment thereof.

25.2.1 It is a term of this contract that the party invoking arbitration shall give a list of disputes with amounts claimed in respect of each such dispute along with the notice for appointment of arbitrator and giving reference to the rejection by the Chairman of the appeal.

25.2.2 It is also a term of this contract that no person other than person / persons appointed as aforesaid should act as arbitrator / arbitrators and if for any reason

that is not possible, the matter shall not be referred to arbitration at all.

- 25.2.3 It is also a term of this contract that if the Contractor does not make any demand for appointment of arbitrator in respect of any claims in writing as aforesaid within 120 days of receiving the intimation from the Engineer that the final bill is ready for payment, the claim of the Contractor shall be deemed to have been waived and absolutely barred and the Employer or his authorized representative shall be discharged and released of all liabilities under the contract in respect of these claims.
- 25.2.4 The arbitration shall be conducted in accordance with the provisions of the Arbitration and Conciliation Act, 1996 (26 of 1996) or any statutory modifications or reenactment thereof and the rules made there under and for the time being in force shall apply to the arbitration proceeding under this clause.
- 25.2.5 It is also a term of this contract that the Arbitrator / Arbitral Tribunal shall adjudicate only on such disputes as are referred to him/them and give separate award against each dispute and claim referred and in all cases where the total amount of the claims by any party exceeds Rs. 1,00,000/- the arbitrator shall give reasons for the award.
- 25.2.6 It is also a term of the contract that if any fees are payable to the arbitrator these shall be paid equally by both the parties.

It is also a term of the contract that the arbitrator/arbitrators shall be deemed to have entered on the reference on the date he / they issues notice to both the parties calling them to submit their statement of claims and counter statement of claims. The venue of the arbitration shall be at Cochin. The fees, if any, of the arbitrator shall, if required to be paid before the award is made and published, be paid half and half by each of the parties. The cost of the reference and of the award (including the fees, if any, of the arbitrator) shall be in the discretion of the arbitrator who may direct to any party by whom and in what manner, such costs or any part thereof shall be paid and fix or settle the amount of costs to be so paid.”

26. Computerised Measurement Book

Engineer or his nominee shall, except as otherwise provided, ascertain and determine by measurement, the value of work done in accordance with the contract.

All measurement of all items having financial value shall be entered by the Contractor and compiled in the shape of the Computerised Measurement Book having pages of A-4size as per the format of the department so that a complete record is obtained of all the items of works performed under the Contract.

All such measurements and levels recorded by the Contractor or his authorized representative from time to time, during the progress of the work, shall be got checked by the Contractor from the Engineer or his authorized representative as per interval or program fixed in consultation with Engineer or his authorized representative. After the necessary corrections made by the Engineer or his nominee, the measurement sheets shall be returned to the Contractor for incorporating the corrections and for resubmission to the Engineer for the dated signatures by the Engineer or his nominee and the Contractor or their representatives in token of their acceptance.

Whenever bill is due for payment, the Contractor would initially submit draft computerized measurement sheets and these measurements would be got checked/test checked from the Engineer- and/or his authorized representative. The Contractor will, thereafter, incorporate such changes as may be done during these checks/test checks in his draft computerized measurements, and submit to the

department a computerized measurement book, duly bound, and with its pages machine numbered. The Engineer and/or his authorized representative would thereafter check this MB, and record the necessary certificates for their checks/test checks.

The final, fair, computerized measurement book given by the Contractor, duly bound, with its pages machine numbered, should be 100% correct, and no cutting or over-writing in the measurements would thereafter be allowed. If at all any error is noticed, the Contractor shall have to submit a fresh computerized MB with its pages duly machine numbered and bound, after getting the earlier MB cancelled by the department. Thereafter, the MB shall be taken in the Divisional Office records, and allotted a number as per the Register of Computerised MBs. This should be done before the corresponding bill is submitted to the Division Office for payment. The Contractor shall submit two spare copies of such computerized MB's for the purpose of reference and record by the various officers of the department.

The Contractor shall also submit to the department separately his computerized Abstract of Cost and the bill based on these measurements, duly bound, and its pages machine numbered along with two spare copies of the bill. Thereafter, this bill will be processed by the Division Office and allotted a number as per the computerized record in the same way as done for the measurement book meant for measurements.

The Contractor shall, without extra charge, provide all assistance with every appliance, labour and other things necessary for measurements and recording levels.

Except where any general or detailed description of the work expressly shows to the contrary, measurements shall be taken in accordance with the procedure set forth in the Specifications notwithstanding any provision in the relevant Standard Method of measurement or any general or local custom. In the case of items which are not covered by specifications, measurements shall be taken in accordance with the relevant standard method of measurement issued by the Bureau of Indian Standards and if for any item no such standard is available then a mutually agreed method shall be followed.

The Contractor shall give not less than seven days' notice to the Engineer or his authorised representative in charge of the work before covering up or otherwise placing beyond the reach of measurement any work in order that the same may be measured and correct dimensions thereof be taken before the same is covered up or placed beyond the reach of measurement and shall not cover up and place beyond reach of measurement any work without consent in writing of the Engineer or his authorised representative in charge of the work who shall within the aforesaid period of seven days inspect the work, and if any work shall be covered up or placed beyond the reach of measurements without such notice having been given or the Engineer's consent being obtained in writing the same shall be uncovered at the Contractor's expense, or in default thereof no payment or allowance shall be made for such work or the materials with which the same was executed.

Engineer or his authorised representative may cause either themselves or through another officer of the department to check the measurements recorded jointly or otherwise as aforesaid and all provisions stipulated herein above shall be applicable to such checking of measurements or levels.

It is also a term of this Contract that recording of measurements of any item of work in the measurement book and/or its payment in the interim, on account or final bill shall not be considered as conclusive evidence as to the sufficiency of any work or material to which it relates nor shall it relieve the Contractor from liabilities from any over measurement or defects noticed till completion of the Defects Liability Period.

B. Time Control

27. Program

- 27.1 Within the time stated in the Contract Data the Contractor shall submit to the Engineer or his nominee for approval a Program showing the general methods, arrangements, order, and timing for all the activities in the works along with monthly cash flow forecast.
- 27.2 An update of the Program shall be a program showing the actual progress achieved on each activity and the effect of the progress achieved on the timing of the remaining work including any changes to the sequence of the activities.
- 27.3 The Contractor shall submit to the Engineer on the first day of each week or such longer period as the Engineer may from time to time direct, a progress report in an approved form showing up-to-date total progress, progress achieved against planned progress, during the previous week and progress forecast for the following week for all important items in each section or portion of the Works, in relation with the approved Program.
- 27.4 The Contractor shall submit to the Engineer or his nominee, for approval an updated Program at intervals no longer than the period stated in the Contract Data. If the Contractor does not submit an updated Program within this period, the Engineer or his nominee may withhold the amount stated in the Contract Data from the next payment certificate and continue to withhold this amount until the next payment after the date on which the overdue Program has been submitted.

28. Revised Program

- 28.1 The Engineer or his nominee's approval of the Program shall not alter the Contractor's obligations. The Contractor may revise the Program and submit it to the Engineer or his nominee again at any time for approval. A revised Program is to show the effect of Variations and Compensation Events.

29. Extension of the Intended Completion Date

- 29.1 The Engineer or his nominee shall extend the Intended Completion Date if a Compensation Event occurs or a Variation is issued which makes it impossible for Completion to be achieved by the Intended Completion Date without the Contractor taking steps to accelerate the remaining work and which would cause the Contractor to incur additional cost.
- 29.2 The Engineer or his nominee shall decide whether and by how much to extend the Intended Completion Date within 21 days of the Contractor asking the Engineer or his nominee for a decision upon the effect of a Compensation Event or Variation or any other events causing delay, beyond the control of the Contractor and submitting full supporting information. If the Contractor has failed to give early warning of a delay or has failed to cooperate in dealing with a delay, the delay by this failure shall not be considered in assessing the new Intended Completion Date.
- 29.3 Such Request for extension of time, to be eligible for consideration, shall be made by Contractor in writing within fourteen days of the happening of the event causing delay on the prescribed form. The Contractor may also, if practicable, indicate in such a request the period for which extension is desired.

30. Delays Ordered by the Engineer or his nominee

30.1 The Engineer or his nominee may instruct the Contractor to delay the start or progress of any activity within the Works.

31. Management Meetings

31.1 Either the Engineer or his nominee or the Contractor may require the other to attend a management meeting. The business of a management meeting shall be to review the plans for remaining work and to deal with matters raised in accordance with the early warning procedure.

31.2 The Engineer or his nominee shall record the business of management meetings and is to provide copies of his record to those attending the meeting and to the Employer. The responsibility of the parties for actions to be taken is to be decided by the Engineer or his nominee either at the management meeting or after the management meeting and stated in writing to all who attended the meeting.

32. Early Warning

32.1 The Contractor is to warn the Engineer or his nominee at the earliest opportunity of specific likely future events or circumstances that may adversely affect the quality of the work, increase the Contract Price or delay the execution of works. The Engineer or his nominee may require the Contractor to provide an estimate of the expected effect of the event or circumstance on the Contract Price and Completion Date. The estimate is to be provided by the Contractor as soon as reasonably possible.

32.2 The Contractor shall cooperate with the Engineer or his nominee in making and considering proposals for how the effect of such an event or circumstance can be avoided or reduced by anyone involved in the work and in carrying out any resulting instruction of the Engineer or his nominee.

32.3 The Contractor shall immediately give notice in writing to the Engineer or his nominee upon happening of any event as detailed below if the work is delayed by:

- i) Force majeure, or
- ii) Abnormally bad weather, or
- iii) Serious loss or damage by fire, or
- iv) Civil commotion, local commotion of workmen, strike or lockout, affecting any of the trades employed on the work, or
- v) Delay on the part of other Contractors or tradesmen engaged by Engineer in executing work not forming part of the Contract, or
- vi) Any other cause which, in the absolute discretion of Engineer, is beyond the Contractor's control.

33. Force Majeure

"Force Majeure" means an exceptional event or circumstance:

- (a) Which is beyond a Party's control,
- (b) Which such Party could not reasonably have provided against before entering into the Contract,
- (c) Which, having arisen, such Party could not reasonably have avoided or overcome, and
- (d) Which is not substantially attributable to the other Party.

Force Majeure may include, but is not limited to, exceptional events or circumstances of the kind listed below, so long as conditions (a) to (d) above are satisfied:

- (i) War and hostilities (whether war be declared or not), invasion, act of foreign enemies;
- (ii) Rebellion, revolution, insurrection, or military or usurped power, or civil

war;

- (iii) Ionizing radiations, or contamination by radioactivity from any nuclear fuel, or from any nuclear waste, from the combustion of nuclear fuel, radioactive toxic explosive or other hazardous properties of any explosive nuclear assembly or nuclear component thereof;
- (iv) Pressure waves caused by aircraft or other aerial devices travelling at sonic or supersonic speeds; and
- (v) Riot, commotion or disorder, unless solely restricted to the employees of the Contractor or of his Sub Contractors and arising from the conduct of the Works;
- (vi) Floods, tornadoes, earthquakes and landslides.

C. Quality Control

34. Identify Defects

34.1 The Engineer or his nominee shall check the Contractor's work and notify the Contractor of any Defects that are found. Such checking shall not affect the Contractor's responsibilities. The Engineer or his nominee may instruct the Contractor to search for a Defect and to uncover and test any work that the Engineer or his nominee considers may have a Defect.

35. Tests

35.1 If the Engineer or his nominee instructs the Contractor to carry out a test not specified in the Specification to check whether any work has a Defect and if the test shows that it has defect, the Contractor shall pay for the test and any samples. If there is no Defect the test shall be a Compensation Event.

36. Defect Liability

36.1 The Engineer or his nominee shall give notice to the Contractor of any Defects before the end of the Defects Liability Period, which begins at Completion and is defined in the Contract Data. The Defects Liability Period shall be extended for as long as Defects remain to be corrected.

36.2 Every time notice of a Defect is given, the Contractor shall correct the notified defect within the length of time specified by the Engineer or his nominee's notice. To the intent that the works shall, at or as soon as practicable after the expiration of the Defects Liability Period, be delivered to the Employer in the condition required by the Contract, fair wear and tear excepted, to the satisfaction of the Engineer, the Contractor shall :

- (a) Complete the work, if any, outstanding on the date stated in the Taking-Over Certificate within the date to be intimated by the Engineer and
- (b) Execute all such work of amendment, reconstruction, and remedying defects, shrinkages or other faults as the Engineer may, during the Defects Liability Period or within 14 days after its expiration, as a result of an inspection made by or on behalf of the Engineer prior to its expiration, instruct the Contractor to execute.

36.3 Cost of Remedying Defects

All work referred to in Sub-Clause 36.2 shall be executed by the Contractor at his own cost if the necessity thereof is, in the opinion of the Engineer, due to:

- (a) The use of materials, Plant or workmanship not in accordance with the Contract, or
- (b) Where the Contractor is responsible for the design of part of the Permanent Works, any fault in such design, or the neglect or failure on the part of the Contractor to comply with any obligation, expressed or implied, on the Contractor's part under the Contract.

36.4 Defects Liability Certificate

The Contract shall not be considered as completed until a Defects Liability Certificate shall have been signed by the Engineer and delivered to the Employer, with a copy to the Contractor, stating the date on which the Contractor shall have completed his obligations to execute and complete the Works and remedy any defects therein to the Engineer's satisfaction. The Defects Liability Certificate shall be given by the Engineer within 28 days after the expiration of the Defects Liability Period, or, if different defects liability periods shall become applicable to different Sections or parts of the Permanent Works, the expiration of the latest such period, or as soon thereafter as any works instructed, pursuant to Clauses 36, have been completed to the satisfaction of the Engineer.

36.5 Unfulfilled Obligations

Notwithstanding the issue of the Defects Liability Certificate the Contractor and the Employer shall remain liable for the fulfillment of any obligation incurred under the provisions of the Contract prior to the issue of the Defects Liability Certificate which remains unperformed at the time such Defects Liability Certificate is issued and, for the purposes of determining the nature and extent of any such obligation, the Contract shall be deemed to remain in force between the parties to the Contract.

36.6 Uncorrected Defects.

If the Contractor has not corrected a Defect within the time specified in the Engineer's or his nominee's notice the Engineer or his nominee will assess the cost of having the Defect corrected, and the Contractor will pay this amount.

D. Cost Control

37. Bill of Quantities

37.1 The Bill of Quantities shall contain items for the construction, supply, installation, testing and commissioning work to be done by the Contractor.

37.2 The Bill of Quantities is used to calculate the Contract Price. The Contractor is paid for the quantity of the work done at the rate in the Bill of Quantities for each item.

38. Changes in the Quantities

38.1 If the final quantity of the work done differs from the quantity in the Bill of Quantities for the particular item by more than 25 % provided the change exceeds (+)10% of initial Contract Price, the Engineer or his nominee shall adjust the rate(s), to allow for the change.

38.2 The Engineer or his nominee shall not adjust rates for changes in quantities if thereby the Initial Contract Price is exceeded by more than 10% except with the prior approval of the Employer.

38.3 If requested by the Engineer or his nominee where the quoted rate (s) of any item(s) is abnormally high, the Contractor shall provide the Engineer or his nominee with a detailed cost breakdown of such rate in the Bill of Quantities.

39. Variations

39.1 The Engineer shall make any Variation of the form, quality or quantity of the Works or any part thereof that may, in his opinion, be necessary and for that purpose, or if for any other reason it shall, in his opinion, be appropriate, he shall have the authority to instruct the Contractor to do and the Contractor shall do any of the following:

(a) increase or decrease the quantity of any work included in the Contract,

- (b) omit any such work,
- (c) change the character or quality or kind of any such work,
- (d) change the levels, lines, position and dimension of any part of the Works,
- (e) execute additional work of any kind necessary for the completion of the Works,
- (f) change any specified sequence or timing of construction of any part of the Works.

No such Variation shall in any way vitiate or invalidate the Contract, by the effect, if any, of all such Variations shall be valued in accordance with Clause 40. Provided that where the issue of an instruction to vary the works is necessitated by some default of or breach of contract by the Contractor or for which he is responsible, any additional cost attributable to such default shall be borne by the Contractor. All Variations shall be included in updated Programs produced by the Contractor.

39.2 Instructions for Variations

The Contractor shall not make any such Variation without an instruction of the Engineer. Provided that no instruction shall be required for increase or decrease in the quantity of any work where such increase or decrease is not the result of an instruction given under this clause, but is the result of the quantities exceeding or being less than those stated in the Bill of Quantities.

40. Payments for Variations

- 40.1 Variation permitted shall not exceed (+) 25% in quantity of each individual item, and (+)10% of the total contract price. Within 14 days of the date of instruction for executing varied work, extra work or substitution, and before the commencement of such work, notice shall be given either (a) by the Contractor to the Employer of his intention to claim extra payment or a varied rate or price, or (b) by the Employer to the Contractor of his intention to vary rate or price.
- 40.2 For items not existing in the Bill of Quantities or substitution to items in the Bill of Quantities, rate payable should be determined by methods given below and in the order given below:
 - i) Rates and prices derived from the rate of similar items in Contract.
 - ii) Rates and prices in the Schedule of Rates applicable to the Contract plus Ruling percentage.
 - iii) Market rates of materials and labor, hire charges of plant and machinery used, plus 10% for overheads and profits of Contractor.
- 40.3 For items in the Bill of Quantities but where quantities have increased beyond the variation limits, the rate payable for quantity in excess of the quantity in the Bill of Quantity plus the permissible variation shall be as determined by methods given below:
 - i) Rates and prices in the Schedule of Rates applicable to the Contract plus Ruling percentage.
 - ii) Market rates of material and labor, hire charges of plant and machinery used plus 10% for overheads and profits of Contractor.whichever is lower, but not less than the rate in the Bill of Quantities
- 40.4 If there is delay in the Employer and the Contractor coming to an agreement on the rate of an extra item, rates as proposed by the Employer shall be payable provisionally till such time as the rates are finally determined or till date mutually agreed.
- 40.5 If the Engineer or his nominee decides that the urgency of varying the work prevent a quotation being given and considers not delaying the work, no quotation shall be given and the Variation shall be treated as a Compensation Event.

41. Cash flow forecasts

41.1 When the Program is updated, the Contractor is to provide the Engineer or his nominee with an updated cash flow forecast.

42. Payment Certificates

42.1 The Contractor shall submit to the Engineer or his nominee monthly statements of the estimated value of the work completed less the cumulative amount certified previously.

42.2 The Engineer or his nominee shall check the Contractors' monthly statement within 14 days and certify the amount to be paid to the Contractor after taking into account any credit or debit for the month in question in respect of materials for the works in the relevant amounts and under conditions set forth in sub-clause 51.6 of the Contract Data (Secured Advance).

42.3 The value of work executed shall be determined by the Engineer or his nominee.

42.4 The value of work executed shall comprise the value of the quantities of the items in the Bill of quantities completed.

42.5 The value of work executed shall include the valuation of variations and Compensation Events.

42.6 The Engineer or his nominee may exclude any item certified in a previous certificate or reduce the proportion of any item previously certified in any certificate in the light of later information.

43. Payments

43.1 Bills shall be prepared and submitted by the Contractor. Joint measurements shall be taken continuously and need not be connected with billing stage. System of 4 copies of measurements, one each for Contractor, Employer and Engineer or his nominee, and signed by both Contractor and Engineer or his nominee shall be followed.

43.2 Payment of Bills for civil works shall be regulated as detailed hereunder:

43.2.1 Interim Bills shall be paid within 21 days of date of submission of bills in full shape by the Contractor. 75% of the bill amount shall be paid within 7 days of submission of the bill, if on request by the Contractor. Balance amount of the verified bill shall be paid within 21 days of the submission of the bill.

43.2.2 Final Bill shall be paid within 3 months as detailed below on issue of Taking Over Certificate by the Engineer or his nominee. The Contractor shall submit final Bill within 30 days of issue of Taking Over Certificate. Engineer or his nominee shall check the bill within 30 days after its receipt and return the bill to Contractor for corrections, if any. The Contractor should re-submit the bill with corrections within 15 days of its return by the Engineer or his nominee. The re-submitted bill shall be checked and paid within 30 days of its receipt.

43.3 Payment for Electrical and Mechanical works shall be regulated as detailed below:

43.3.1 The Contractor shall be entitled upon certificates of the Engineer or his nominee to payments in accordance with the following provisions:

1) **For supply portion :** 75% of the value, as certified by the Engineer or his nominee, of the materials from time to time delivered on the site.

Balance 25% after completing the work in all respects, commissioning and handing over the installation to the Employer to the satisfaction of the Engineer and his nominee and his certification.

2) **For erection portion :**

i) 85% of the value as certified by the Engineer or his nominee, of the installation portion on completion of the erection work under contract,

for which payments are claimed.

- ii) Balance 15% along with other payments if any, after completing the work in all respects, commissioning and taking over the installation by the Employer to the satisfaction of the Engineer and his nominee and his certification.
- 43.3.2 For HT works, the work shall not be considered as completed until the installation is energized after obtaining approval certificate from Central Electrical Authority(CEA) and upon the issuance of taking over certificate by Engineer or his nominee. The final payment shall be made only after taking over the installation by the Employer.
- 43.4 All the interim payments shall be regarded as payment by way of advances against final payment only and shall not preclude the requiring of bad, unsound and imperfect or unskilled work to be rejected, removed, taken away and reconstructed or re-erected. Any certificate given by the Engineer or his nominee relating to the work done or materials delivered forming part of such payment, may be modified or corrected by any subsequent such certificate(s) or by the final certificate and shall not by itself be conclusive evidence that any work or materials to which it relates is/are in accordance with the contract and specifications. Any such interim payment, or any part thereof shall not in any respect conclude, determine or affect in any way powers of the Engineer- or his nominee-charge under the contract or any of such payments be treated as final settlement and adjustment of accounts or in any way vary or affect the contract.
- 43.5 Pending consideration of extension of date of completion interim payments shall continue to be made as herein provided, without prejudice to the right of the department to take action under the terms of this contract for delay in the completion of work, if the extension of date of completion is not granted by the competent authority.
- 43.6 No further claims shall be made by the Contractor after submission of the final bill and these shall be deemed to have been waived and extinguished.
- 43.7 If an amount certified is increased in a later certificate as a result of an award by the Arbitrator, the Contractor shall be paid interest upon the delayed payment as set out in the award. Interest shall be calculated from the date upon which the increased amount would have been certified in the absence of dispute.
- 43.8 Items of the Works for which no rate or price has been entered in will not be paid for by the Employer and shall be deemed covered by other rates and prices in the Contract.
- 43.9 All payments to the Contractor under the contract shall unless otherwise stated elsewhere be made to the Contractor in Indian currency through e- payments through designated Bank.

44 Compensation Events

- 44.1 The following mutually agreed Compensation Events unless they are caused by the Contractor would be applicable:
- (a) The Employer does not give access to a part of the Site by the Site Possession Date stated in the Contract Data.
 - (b) The Employer modifies the schedule of other Contractors in a way which affects the work of the Contractor under the contract.
 - (c) The Engineer or his nominee orders a delay or does not issue drawings, specifications or instructions required for execution of works on time.
 - (d) The Engineer or his nominee instructs the Contractor to uncover or to carry out additional tests upon work which is then found to have no Defects.

- (e) Ground conditions are substantially more adverse than could reasonably have been assumed before issuance of Letter of Acceptance from the information issued to Bidders (including the Site Investigation Reports), from information available publicly and from a visual inspection of the site.
- (f) The Engineer or his nominee gives an instruction for dealing with an unforeseen condition, caused by the Employer, or additional work required for safety.
- (g) Other Contractors, public authorities, utilities or the Employer does not work within the dates and other constraints stated in the Contract that cause delay or extra cost to the Contractor.
- (h) The effect on the Contractor of any of the Employer's Risks.
- (i) Any other Compensation Events listed in the Contract Data or mentioned in the contract.

Whenever any compensation event occurs, the Contractor will notify the Employer, within 14 days and provide a forecast cost of the compensation event.

- 44.2 If a Compensation Event would cause additional cost or would prevent the work being completed in the Intended Completion Date, the Contract Price shall be increased and/or the Intended Completion Date shall be extended. The Engineer or his nominee shall decide whether and by how much the Contract Price shall be increased and whether and by how much the Intended Completion Date shall be extended.
- 44.3 As soon as information demonstrating the effect of each Compensation Event upon the Contractor's forecast has been provided by the Contractor, it is to be assessed by the Engineer or his nominee and the Contract Price shall be adjusted accordingly. If the Contractor's forecast is deemed unreasonable the Engineer or his nominee shall adjust the Contract Price based on Engineer or his nominee's own forecast. The Engineer or his nominee will assume that the Contractor will react competently and promptly to the event.

45. Rates for items to be inclusive of Taxes

- 45.1 The rates quoted by the Contractor shall be deemed to be inclusive of the sales tax and other taxes, but excluding service tax that the Contractor will have to pay for the performance of this Contract. The Employer will perform such duties in regard to the deduction of such taxes at sources as per applicable law. Any new Taxes, levies, duties imposed after signing the Contract shall be reimbursed by the Employer on production of documentary evidence.

Service Tax shall be claimed by the Contractor in the invoice except for those services which are covered under Negative list of Services under section 66D of the Finance Act and Mega Exemption Notification No 25/2012-ST dated 20.06.2012. The rate of Service Tax shall be as per the provisions of Point of Taxation Rules, 2011 and value on which service tax to be applied shall be as per the provisions of Service Tax (Determination of Valuation Rules), 2006. Where the contractor is an individual, HUF, Partnership firm or Association of Person, Service Tax shall be claimed under Reverse Charge Mechanism.

46. Currencies

- 46.1 All payments shall be made in Indian Rupees unless specifically mentioned.

47 Price Adjustment.

- 47.1 No price adjustment shall be made for works except for the provisions under clause 47.1.A herein under and clause 47.2 for any subsequent change in legislation.

47.1.A For Civil contract works, with intended completion period of the contract more than 12 months, Price adjustment shall be made for the variation in price of materials such as cement, reinforcement steel, structural steel, bitumen and bitumen emulsion. Compensation for variation in cost of the materials shall be regulated as described below subject to the condition that such compensation for variation in prices shall be only for the work done during the stipulated period of the contract including such period for which the validity of the contract is extended.

The rates quoted for the items in the Schedule of Quantities shall be based on the Base rates of the materials provided in the Contract Data and these base rates are applicable at the Supplier's local delivery point and shall not include cost of loading to Contractor's vehicle, transporting to work site and unloading and stacking at work site.

During execution and actual procurement by the Contractor, increase or decrease in the cost of materials over the Base rate (which results in an increase or decrease of cost to the Contractor in carrying out the works) shall form an addition or reduction as the case may be to or from the contract price and shall be paid to or allowed by the Contractor accordingly, provided that such increase or decrease shall relate only to the quantities of material which the Engineer is satisfied as reasonably required for the works. While considering the reasonable requirement of the materials for the work, allowance towards wastage/unusable cutting bits shall be permitted as provided in the Contract Data. The prices of materials considered for regulating the payment as aforesaid shall be the price charged by the suppliers approved by the Engineer at the supplier's local delivery point and this shall not include the cost of loading to the Contractor's vehicle, transporting to the work site and unloading and stacking at work site

47.2 **Subsequent Legislation**

If, after 28 (Twenty eight) days prior to the last date for submission of tenders for the contract, there occur changes to any National or State Statute, Ordinance or Decree or other Law or any regulation or bye law of any local or other duly constituted authority or introduction of any such state statute, Ordinance, Decree, Law, regulation or bye law which causes additional or reduced cost to the Contractor in execution of the contract, such additional or reduced cost shall, after due consultation with the Employer and the Contractor be determined by the Engineer or his nominee and shall be added to or deducted from the contract price and the Engineer or his nominee shall notify the Contractor accordingly with a copy to the Employer.

48 Retention

48.1 The Employer shall retain from each payment due to the Contractor the proportion stated in the Contract Data until Completion of the whole of the Works.

48.2 For civil works, Retention Money shall be deducted at 5% of the gross amount of the bill from the first Running Account bill onwards till the recovered sum amounts to 5% of the contract value or the value of the work done whichever is higher. Retention money shall be refunded to the Contractor within 14days from the date of payment of final bill.

48.3 No retention money shall be deducted for Electrical and Mechanical works.

49 Liquidated Damages

49A In case of delay in completion of the contract, liquidated damages (L.D) may be levied at the rate of half per cent (½%) of the contract price per week of delay, subject to a maximum of 10 per cent of the contract price. The amount of

Liquidated damages can be adjusted or set-off against any sum payable to the Contractor.

- 49A(i) The Employer, if satisfied, that the works can be completed by the Contractor within a reasonable time after the specified time for completion, may allow further extension of time at its discretion with or without the levy of L.D. In the event of extension granted being with L.D, the Employer will be entitled without prejudice to any other right or remedy available in that behalf, to recover from the Contractor as agreed damages equivalent to half per cent (½%) of the contract value of the works for each week or part of the week subject to the ceiling defined in sub-Clause 49 A.
- 49A(ii) The Employer, if not satisfied that the works can be completed by the Contractor, and in the event of failure on the part of the Contractor to complete work within further extension of time allowed as aforesaid, shall be entitled, without prejudice to any other right, or remedy available in that behalf, to rescind the contract.
- 49A(iii) The Employer, if not satisfied with the progress of the contract and in the event of failure of the Contractor to recoup the delays in the mutually agreed time frame, shall be entitled to terminate the contract.
- 49A(iv) In the event of such termination of the contract as described in clauses 49A(ii) or 49A(iii) or both the Employer shall be entitled to recover L.D. upto ten per cent (10%) of the contract value and forfeit the security deposit made by the Contractor besides getting the work completed by other means at the risk and cost of the Contractor.

49B Reduction of Liquidated Damages

If, before the Time for Completion of the whole of the Works or, if applicable, any Section, Taking Over Certificate has been issued for any part of the Works or of a Section, the liquidated damages for delay in completion of the remainder of the Works or of that section shall, for any period of delay after the date stated in such Taking Over Certificate, and in the absence of alternative provisions in the Contract, be reduced in the proportion which the value of the part so certified bears to the value of the whole of the Works or Section, as applicable. The provisions of this Sub-Clause shall only apply to the rate of liquidated damages and shall not affect the limit thereof.

50 Nominated Sub Contractors

- 50.1 All specialists, merchants, tradesmen and others executing any work or supplying any good, materials, Plant or services for which provisional Sums are included in the Contract, who may have been or be nominated or selected or approved by the Employer or the Engineer, and all persons to whom by virtue of the provisions of the Contract, the Contractor is required to subcontract shall, in the execution of such work or the supply of such goods, materials, Plant or services, be deemed to be Sub Contractors to the Contractor and are referred to in this Contract as “Nominated Sub Contractors”.

51 Advance payment

The Employer shall make the following advance payments (as admissible in the contract data) if requested by the Contractor in writing:

- 51.1 Mobilisation Advance shall be paid upto 5% of Contract price, payable in two equal installments. The first installment shall be paid after mobilisation has started and next installment shall be paid after satisfactory utilisation of earlier advance for which, the Contractor shall furnish proof of the satisfactory utilization of the amount.

- 51.2 Construction/ installation equipment Advance shall be paid upto 5% of Contract price, limited to 90% of assessed cost of machinery. Equipment advance will be paid in two or more installments. First installment shall be paid after Construction Equipment has arrived at the site and next installment shall be paid after satisfactory utilisation of earlier advance (s).
- 51.3 Mobilisation Advance and Construction Equipment Advance shall be paid at 14% interest rate and against Bank Guarantee for Mobilisation Advance and against hypothecation of Construction Equipment to the Employer.
- 51.4 Recovery of Mobilisation and Construction Equipment advance will start when 15% of the work is executed and recovery of total advance should be completed by the time 80% of the original Contract work is executed.
- 51.5 The above advance payments shall be admissible only for the works where estimated cost put to tender is more than Rs. 5.0 crores.
- 51.6 **Secured Advance**

The Engineer or his nominee shall make advance payment in respect of materials and plant brought to site but not yet incorporated and installed in the Works in accordance with conditions stipulated in the Contract Data.

75% of cost of materials and plant brought to site for incorporation into the works only shall be paid as Secured Advance. Materials which are of perishable nature should be adequately insured.

The Contractor, on signing an indenture in the form to be specified by the Engineer, shall be entitled to be paid during the progress of the execution of the work upto 75% of the assessed value of any materials which are in the opinion of the Engineer nonperishable, non-fragile and noncombustible and are in accordance with the contract and which have been brought on the site in connection therewith and are adequately stored and/or protected against damage by weather or other causes but which have not at the time of advance been incorporated in the works. When materials on account of which an advance has been made under this sub-clause are incorporated in the work the amount of such advance shall be recovered/deducted from the next payment made under any of the clause or clauses of this contract.

Such secured advance shall also be payable on other items of perishable nature, fragile and combustible with the approval of the Engineer provided the Contractor provides a comprehensive insurance cover for the full cost of such materials. The decision of the Engineer shall be final and binding on the Contractor in this matter. No secured advance, shall however, be paid on high-risk materials such as ordinary glass, sand, petrol, diesel etc.

52 **Securities**

- 52.1 Security Deposit (SD) shall be at 10% of the contract value or value of the work done whichever is higher and it shall consist of two parts:

- a) Performance Security to be submitted at award of the work
- b) Retention Money to be recovered from Running Bills as detailed in Clause 48 above.

The total amount thus deposited towards SD will be retained as security for the due and proper fulfillment of the contract and will not carry any interest. Such deposit shall be forfeited on failure to perform or non-fulfillment by the Contractor of the terms and conditions of the contract.

- 52.2 **Performance Security** shall be as below:

- a) For civil works : 5% of the Contract value
- b) For all Electrical and Mechanical works : 10% of the Contract value

- 52.3 The Performance Security shall be provided by the Contractor to the Employer not later than 21 days for domestic bids and 28 days for international bids from the date of letter of acceptance and shall be furnished in one of the following forms:
- i) Banker's Cheque/Demand Draft/Pay Order of a Scheduled Bank.
 - ii) An irrevocable Bank Guarantee(BG) enforceable and encashable at Cochin, drawn from any scheduled bank operating in India as per the proforma.
- 52.4 The BG furnished towards the Performance Security shall be valid for a period until a date 30days from the day of expiry of the defect liability period stipulated as per the terms of the contract.
- 52.5 Unless performance Security is furnished within the period as specified in clause 52.3 above or such extension of that period as may be permitted by the Engineer in writing, the Earnest Money will be liable to forfeiture and the contract to cancellation.
- 52.6 Performance Security will be released / refunded to the Contractor not later than 30 days from the date of completion of Defect Liability / warranty period of the work.

53 Removal of Craft or Plant which has sunk

The Contractor shall forthwith and with dispatch at his own cost raise and remove any craft or plant (floating or otherwise) belonging to him or to any sub-Contractor employed by him (including also any plant which is held by the Contractor or any sub-Contractor under agreement for hire or hire-purchase) which may be sunk in the course of the construction completion or maintenance of the Works or otherwise deal with the same as the Engineer may direct or until the same shall be raised and removed, the Contractor shall set all such buoys and display at night such lights and do all such things for the safety of navigation as may be required by the Engineer or by Employer. In the event of the Contractor not carrying out his obligation imposed upon him by this clause the Employer may provide buoy and light such sunken craft or plant and raise and remove the same (without prejudice to the right of the Employer to hold the Contractor liable under General Conditions) and the Contractor shall refund to the Employer all costs incurred in connection therewith.

Contractor's Temporary Moorings

Should the Contractor need, in connection with implementing the Works, to provide temporary moorings for his craft he may be allowed to do so in location and manner approved by the Engineer subject to all necessary permissions being first obtained by the Contractor from the authorities concerned. The Contractor shall not lay his temporary moorings such as to interfere with the port traffic and such moorings shall be removed if and when required by the Employer.

54 Cost of Repairs

- 54.1 Loss or damage to the Works or Materials to be incorporated in the Works between the Start Date and the end of the Defects Liability period shall be remedied by the Contractor at the Contractor's cost if the loss or damage arises from the Contractor's acts or omissions.

E. Finishing The Contract

55 Completion

- 55.1 After completion of the work, the Contractor will serve a written notice to the Engineer or his nominee/Employer to this effect. The Engineer or his nominee/Employer upon receipt of this notice shall conduct a complete joint survey of the work within 7 days and prepare a defects list jointly. The defects pointed out by the Engineer or his nominee/ Employer would be rectified by the

Contractor within 14 days and thereafter acceptance report be signed jointly by the Contractor and the Employer. This joint acceptance report shall be treated as 'Completion Certificate'.

55.2 Substantial Completion of Parts

If any part of the Permanent Works has been substantially completed and satisfactorily passed any Tests on Completion prescribed by the Contract, the Engineer may issue a Taking-Over Certificate in respect of that part of the Permanent works before completion of the whole of the Works and, upon the issue of such Certificate, the Contractor shall be deemed to have undertaken to complete with due expedition any outstanding work in that part of the Permanent Works during the Defects Liability Period.

55.3 Surfaces Requiring Reinstatement

Provided that a Taking Over Certificate given in respect of any Section or part of the Permanent Works before completion of the whole of the Works shall not be deemed to certify completion of any ground or surfaces requiring reinstatement, unless such Taking Over Certificate shall expressly so state.

56 Taking Over

56.1 The Engineer or his nominee shall take over the Site and the Works within seven days of the Engineer or his nominee issuing a certificate of Completion.

56.2 Taking Over Certificate

When the whole of the Works have been substantially completed and have satisfactorily passed any Tests on Completion prescribed by the Contract, the Contractor may give a notice to that effect to the Engineer, with a copy to the Employer, accompanied by a written undertaking to finish with due expedition any outstanding work during the Defects Liability Period. Such notice and undertaking shall be deemed to be a request by the Contractor for the Engineer or his nominee to issue a Taking-over Certificate in respect of the Works. The Engineer or his nominee shall, within 21 days of the date of delivery of such notice, either issue to the Contractor, with a copy to the Employer, a Taking- Over Certificate, stating the date on which, in his opinion, the Works were substantially completed in accordance with the Contract, or give instruction in writing to the Contractor specifying all the work which in the Engineer's opinion, is required to be done by the Contractor before the issue of such Certificate. The Engineer or his nominee shall also notify the Contractor of any defects in the Works affecting substantial completion that may appear after such instructions and before completion of the Works specified therein. The Contractor shall be entitled to receive such Taking Over Certificate within 21 days of completion, to the satisfaction of the Engineer or his nominee, of the Works so specified and remedying any defects so notified.

56.3 Taking Over of Sections or Parts

Similarly, in accordance with the procedure set out in above Clause 55, the Contractor may request and the Engineer or his nominee shall issue a Taking Over Certificate in respect of :

- (a) Any Section in respect of which a separate Time for Completion is provided in the Contract Data , or
- (b) Any substantial part of the Permanent Works which has been both completed to the satisfaction of the Engineer and, otherwise than as provided for in the Contract, occupied or used by the Employer, or
- (c) Any part of the Permanent Works which the Employer has elected to occupy or use prior to completion (where such prior occupation or use is not provided for in the Contract or has not been agreed by the Contractor as a temporary

measure).

57 Final Account

57.1 The Contractor shall supply to the Engineer or his nominee a detailed account of the total amount that the Contractor considers payable under the Contract within 30 days of issue of Taking Over Certificate and the Engineer or his nominee shall certify any final payment that is due to the Contractor within 60 days of receiving the Contractor's account if it is correct and complete. If it is not, the Engineer or his nominee shall issue within 30 days a schedule that states the scope of the corrections or additions that are necessary for the correction. If the Final Account is still unsatisfactory after it has been resubmitted the Engineer or his nominee shall decide on the amount payable to the Contractor and issue a payment certificate, within 60 days of receiving the Contractor's revised account.

58 Submission of 'As-built Drawings'

58.1 "As built" Drawings are required to be submitted by the Contractor by the dates stated in the Contract Data. If the Contractor does not supply the Drawings and/or manuals by the dates stated in the Contract Data, or they do not receive the Engineer or his nominee's approval, the Engineer or his nominee shall withhold the amount stated in the Contract Data from payments due to the Contractor.

59 Termination

59.1 The Employer or the Contractor may terminate the Contract if the other party causes a fundamental breach of the Contract.

59.2 Fundamental breaches of Contract include, but shall not be limited to the following:

- (a) The Contractor stops work for 28 days when no stoppage of work is shown on the current Program and the stoppage has not been authorised by the Engineer or his nominee;
- (b) The Engineer or his nominee instructs the Contractor to delay the progress of the Works and the instruction is not withdrawn within 28 days.
- (c) The Employer or the Contractor becomes bankrupt or goes into liquidation other than for a reconstruction restructure or amalgamation.
- (d) A payment certified by the Engineer or his nominee is not paid by the Employer to the Contractor within 50 days of the date of the Engineer or his nominee's certificate;
- (e) The Engineer or his nominee gives Notice that failure to correct a particular Defect is a fundamental breach of Contract and the Contractor fails to correct it within a reasonable period of time determined by the Engineer or his nominee.
- (f) The Contractor does not maintain a security which is required.
- (g) The Contractor has delayed the completion of works by the number of days for which the maximum amount of liquidated damages can be paid as defined in the Contract data and
- (h) If the Contractor, in the judgment of the Employer has engaged in corrupt or fraudulent practices in competing for or in the executing the Contract.
- (i) The Contractor threatens or misbehaves with or physical attack on any of the employee / officer of the Port

For the purpose of this paragraph: "corrupt practice" means the offering, giving, receiving or soliciting of anything of value to influence the action of a public official in the procurement process or in contract execution. "Fraudulent practice" means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of the Employer, and includes

collusive practice. Bidders (prior to or after bid submission) designed to establish bid prices at artificial non-competitive levels and to deprive the Employer of the benefits of free and open competition.”

- 59.3 When either party to the Contract gives notice of a breach of contract to the Employer for a cause other than those listed under Sub Clause 59.2 above, the Employer shall decide whether the breach is fundamental or not.
- 59.4 Notwithstanding the above, the Employer may terminate the Contract for convenience subject to payment of compensation to the Contractor including loss of profit on uncompleted works. Loss of profit shall be calculated on the same basis as adopted for calculation of extra/additional items.
- 59.5 If the Contract is terminated the Contractor shall stop work immediately, make the Site safe and secure and leave the Site as soon as reasonably possible.

60 Payment upon Termination

- 60.1 If the Contract is terminated because of a fundamental breach of Contract by the Contractor, the Engineer or his nominee shall issue a certificate for the value of the work done less advance payments received upto the date of the issue of the certificate, less other recoveries due in terms of the contract, less taxes due to be deducted at source as per applicable law and less any extra cost of completing the Works through other means which may be incurred by the Employer. If the total amount due to the Employer exceeds any payment due to the Contractor, the difference shall be a debt payable to the Employer.
- 60.2 If the Contract is terminated at the Employer’s convenience or because of a fundamental breach of Contract by the Employer, the Engineer or his nominee shall issue a certificate for the value of the work done, the reasonable cost of removal of Equipment repatriation of the Contractor’s personnel employed solely on the Works, and the Contractor’s costs of protecting and securing the Works and loss of profit on uncompleted works less advance payments received up to the date of the certificate, less other recoveries due in terms of the contract and less taxes due to be deducted at source as per applicable law.

61 Property

- 61.1 All materials on the Site, Plant, Equipment, Temporary Works and Works for which payment has been made to the Contractor by the Employer, are deemed to be the property of the Employer, if the Contract is terminated because of a Contractor’s default.

62 Release from Performance

- 62.1 If the Contract is frustrated by the outbreak of war or by other event entirely outside the control of either the Employer or the Contractor, the Engineer or his nominee shall certify that the Contract has been frustrated. The Contractor shall leave the Site and stop work as quickly as possible after receiving this certificate and shall be paid for all work carried out before receiving it and for any work carried out afterwards to which commitment was made.

F. Labour Laws And Miscellaneous Clauses

63 Labour

- 63.1 The Contractor shall, unless otherwise provided in the Contract, make his own arrangements for the engagement of all staff and labour, local or other, and for their payment, housing, feeding and transport.
- 63.2 The Contractor shall, if required by the Engineer or his nominee, deliver to the Engineer or his nominee a return in detail, in such form and at such intervals as the Engineer or his nominee may prescribe, showing the staff and the numbers of the several classes of labour from time to time employed by the Contractor on the

Site and such other information as the Engineer or his nominee may require.

64 Compliance with labour regulations.

- 64.1 During continuance of the contract, the Contractor and his sub Contractors shall abide at all times by all existing labour enactment and rules made there under, regulations, notifications and bye laws of the State or Central Government or local authority and any other labour law (including rules) regulations, bye laws that may be passed or notification that may be issued under any labour law in future either by the State or Central Government or the local authority. Salient features of some of the major labour laws that are applicable to construction industry are given below. The Contractor shall keep the Employer indemnified in case any action is taken against the Employer by the competent authority on account of contravention of any of the provisions of any Act or rules made there under, regulations or notifications including amendments. If the Employer is caused to pay or reimburse such amounts as may be necessary to cause or observe, or for non-observance of the provisions stipulated in the notifications/ bye laws/ Acts/ Rules/ regulations including amendments, if any, on the part of the Contractor the Engineer or his nominee/Employer shall have the right to deduct any money due to the Contractor including his amount of performance security. The Employer/Engineer or his nominee shall also have right to recover from the Contractor any sum required or estimated to be required for making good the loss or damage suffered by the Employer.
- 64.2 The employees of the Contractor and the Sub-Contractor in no case shall be treated as the employees of the Employer at any point of time.

65 Safety, Security and Protection of the Environment.

- 65.1 Subject and without prejudice to any other provision of the Contract, the Contractor shall take all reasonable precautions:
- a) In connection with the sea or any harbours, docks, rivers, streams waterways drains, watercourses, lakes, reservoirs and the like to prevent:
 - (i) Silting
 - (ii) Erosion of their beds or balks
 - (iii) Pollution of the water so as to affect adversely the quality or appearance thereof or cause injury or death to animal and plant life.
 - b) In connection with underground water resources (including percolating water) to prevent
 - (i) Any interference with the supply to or abstraction from such sources
 - (ii) Pollution of the water so as to affect adversely the quality thereof.
 - (c) All works shall be carried out without unreasonable noise and disturbance. The Contractor shall indemnify the Employer from and against any liability for damages on account of noise or other disturbance created while or in carrying out the work and from and against all claims, demands, proceedings, damages, costs, charges and expenses whatsoever in regard or in relation to such liability.
 - (d) The Contractor at his own cost shall make such provisions for lighting of Works, Temporary Works, Materials and Plant and shall provide all such marks and lights as may be required by the Employer or the Engineer or any other authority having jurisdiction over the Site together with all labour stores and services required for their efficient working and use at any time, day or night.

- (e) The Contractor shall also provide at his own cost every description of watching and maintenance required in connection with the foregoing, and all other services for protecting and securing all places dangerous whether to Contractor's workmen or to other persons until the Works are handed over to the Employer, or till such time when the Engineer decides that such services are no longer required.
- (f) All lights provided by the Contractor shall be placed or screened such as not to interfere with any navigation lights or with any traffic or signal lights of any local or other authority.

66 Insurance of Works and Contractor's Equipment

- 66.1 The Insurance shall be issued by any Insurance Company from its Branch at Cochin which has been determined by the Contractor to be acceptable to the Employer.

67 War Risks Insurance

- 67.1 If the Contractor receives instructions from the Employer to insure against war risks, such insurance if normally available shall be effected, at the cost of the Employer, with the Insurance Company acceptable to the Employer and shall be in the joint names of the Employer and the Contractor.

68 Royalties

Except where otherwise stated, the Contractor shall pay all tonnage and other royalties, rent and other payments or compensation. If any, for getting stone, sand, gravel, clay or other materials by him and his subordinates and his sub contractors and required for the works, at the rates and such conditions as notified by the State Government and shall be realized from the Contractor by way of deductions from the interim certificates and/or final certificate for payments to the Contractor for the gross quantity of material used for or in connection with the work. The royalty will not be deducted if the Contractor submits the Mineral Dispatch Permit (MDP) for the quantity executed by the Contractor for the requisite quantity of material incorporated in works for which MDPB issued.

69 Transport of Contractor's Equipment or Temporary Works

- 69.1 If it is found necessary for the Contractor to move one or more loads of heavy constructional plant or equipment materials or pre-constructed units or parts of units of work over roads, highways or bridges on which such oversized and overweight items are not normally allowed to be moved, the Contractor shall obtain prior permission from the concerned authorities. Payments for complying with the requirements, if any, for protection of or strengthening of the roads, highways or bridges shall be deemed to be included in his contract price.

70 Transport of Materials or Plant

- 70.1 The Contractor shall save harmless and indemnify the Employer in respect of all claims, proceedings, damages, costs, charges and expenses whatsoever arising out of or in relation to any claim made by the concerned authorities in respect of damage or injury to roads, highways or bridges. In case of failure of the Contractor to settle such claims and in case the Employer is held responsible for payment to the authorities, then the Employer shall settle the claim and the Employer's expenses in this regard, as certified by the Engineer, may be deducted by the Employer from any money due or to become due to the Contractor and the Engineer shall notify the Contractor accordingly with a copy to the Employer.

71 Labour Laws & Regulations

The Contractor shall at all times during the continuance of the Contract comply fully with all existing Acts, regulations and bye-laws including all statutory

amendments and re-enactment of State or Central Govt. and other local authorities and any other enactments and act that may be passed in future either by the State or the Central Govt. or local authority, including Indian Workmen's Compensation Act, Contract Labour (Regulation And Abolition) Act 1970 and Equal Remuneration Act 1976, Employees' State Insurance Act, 1948, Factories Act, Minimum Wages Act, Provident Fund Regulations. Employees' Provident Fund Act and schemes made under the same Act, Health and Sanitary Arrangements for Workmen, Insurance and other benefits and shall keep the Employer indemnified in case any action is commenced for contravention by the Contractor. If the Employer is caused to pay or reimburse any amounts as may be necessary to cause or observe, or for non-observance of the provisions stipulated here-forth on the part of the Contractor, the Engineer shall have the right to recover from the Contractor any sum required estimated to be required for making good the loss or damage suffered by the Employer. The Contract shall maintain the records prescribed under ESI Regulations & EPF scheme and make the contribution towards ESI and EPF in respect of persons employed by Contractor. The Contractor shall also make available such records for inspection by ESI Inspector and EPF organization during the inspection and furnish copies of all such records to the Employer regularly.

71.1. **Accident Prevention Officer**

The Contractor shall have on his staff on site an officer dealing with all matters regarding safety and protection against, accidents of all staff and labour. This officer shall be qualified for this work and shall have the authority to issue instructions and shall take protective measures to prevent accidents.

71.2 **Disorderly Conduct**

The Contractor shall at all times take all reasonable precautions to prevent any unlawful, riotous or disorderly conduct by or amongst his staff and labour and for the preservation of peace and protection of Persons and property in the neighborhood of the Works from the same.

71.3 **Health and Safety**

Due precautions shall be taken by the Contractor, and at his own cost, to ensure the safety of his staff and labour and, in collaboration with and to the requirements of the local health authorities, to ensure that medical staff, first aid equipment and stores, sick bay and suitable ambulance services are available at the camps, housing and on the site at all times throughout the period of the Contract and that suitable arrangements are made for the prevention of epidemics and for all necessary welfare and hygiene requirements.

71.4 **Supply of Water**

The Contractor shall, so far as is reasonably practicable, having regard to local conditions provide on the Site, to the satisfaction of the Engineer's Representative, an adequate supply of drinking and other water for the use of the Contractor's staff and work people.

71.5 **Alcoholic Liquor or Drugs**

The Contractor shall not import, sell, give, barter or otherwise dispose of any alcoholic liquor, or drugs or permit or suffer any such importation, sale, gift, barter disposal by his sub-contract agents or employees.

71.6 **Arms and Ammunition**

The Contractor shall not give, barter or otherwise dispose of to any persons or person, any arms or ammunition of any kind or permit or suffer the same as aforesaid.

71.7 Festivals and Religious Customs

The Contractor shall in all dealings with labour in his employment have due regard to all recognised festivals, days of rest and religious or other customs.

71.8 Epidemics

In the event of any outbreak of illness of an epidemic nature, the Contractor shall comply with and carry out such regulations, orders and requirements as may be made by the Government, or the local medical or sanitary authorities for the purpose of dealing with and overcoming the same.

71.9 Employment of Person in the Service of Others

The Contractor shall not recruit or attempt to recruit his staff and labour from amongst persons in the service of the Employer or other agencies engaged for any works of the Employer.

71.10 Housing for Labour

Save in so far as the Contract otherwise provides, the Contractor shall provide and maintain such accommodation and amenities as he may consider necessary for all his staff and labour employed for the purposes of or in connection with the Contract, including all fencing water supply (both for drinking and other purposes), electricity supply, sanitation, cook houses fire prevention and fire-fighting equipment, furniture other requirements in connection with such accommodation or amenities. On completion of the Contract, unless otherwise agreed with the Employer, the temporary camps/housing provided by the Contractor, shall be removed and the site reinstated to its original condition, all to the approval of the Engineer. The land for construction of labour camps shall be allotted only outside the security area to the extent available and such areas allotted as per the prevailing lease rent.

71.11 Fair Wages, Records, Inspection

The Contractor shall pay the labourers engaged by him on the work not less than a fair wage which expression shall mean whether for time or piecework the respective rates of wages as notified under the provisions of the Minimum Wages Act from time to time.

The Contractor shall maintain records of Wages and other remuneration paid to his employee in such form as may be convenient and to the requirements of the Employer/Engineer and the Labour Enforcement Officer (Central), Ministry of Labour, Govt. of India, or such other authorized person appointed by the Central Govt. The Contractor shall allow inspection of the aforesaid Wage Records and Wage Slips to the Engineer and to any of his workers or to his agent at a convenient time and place after due notice is received, or to any other person authorized by him on his behalf.

71.12 Reporting of Accidents

The Contractor shall report to the Engineer details of any accident as soon as possible after its occurrence. In the case of any fatality or serious accident, the Contractor shall, in addition, notify the local police authorities immediately by the available means.

71.13 Observance by Sub-Contractors

The Contractor shall be responsible for observance by his sub-Contractors of the foregoing provisions.

71.14 Port Entry Permission

The Contractor shall submit prior application for Port entry passes to the concerned Port authority for his labours and the staffs engaged in the works.

The Contractor shall retain the original passes obtained by them in respect of their

labour and staff engaged in the Works and produce the same to the Engineer as and when called for. It should not be either destroyed or allowed to be taken by the labour/staff after its use.

71.15 Site - Protected Area

The Site of Work is a protected area. Entry to the Port premises is regulated by entry passes. These passes will be issued by the Central Industrial Security Force or any other authority authorized by the Employer. The Contractor should furnish a list of person for whom the passes are to be issued to the Engineer and arrange to obtain the passes from the appropriate authority, based on the recommendation of the Engineer and abide by the Rules of the Cochin Port Trust with regard to entry etc. For the entry of trucks and other vehicles also, the Contractor should obtain necessary permits at his own cost .

The Contractor shall retain the original passes obtained by them in respect of their labour and staffs engaged in the Works and produce the same to the Engineer as and when called for. It should not be either destroyed or allowed to be taken by the labour/staff after its use.

72 Life Saving Appliances And First Aid

72.1 The Contractor shall provide and maintain upon the Works sufficient proper and efficient life saving appliances and first aid equipment to the approval of the Engineer. The appliances and equipment shall be available for use at all times.

73 Action in case Work not done as per Specifications

All works under or in course of execution or executed in pursuance of the contract shall at all times be open and accessible to the inspection and supervision of the Engineer or his authorised subordinates in charge of the work and all the superior officers, officer of the Quality Control Organisation of the Department, Vigilance Commissions, and the Contractor shall, at all times, during the usual working hours and at all other times at which reasonable notice of the visit of such officers has been given to the Contractor, either himself be present to receive orders and instructions or have a responsible agent duly accredited in writing, present for that purpose. Orders given to the Contractor's agent shall be considered to have the same force as if they had been given to the Contractor himself.

If it shall appear to the Engineer or his nominee or his authorised subordinates in charge of the work or to the Chief Vigilance Commissioner or his subordinate officers, that any work has been executed with unsound, imperfect, or unskillful workmanship, or with materials or articles provided by him for the execution of the work which are unsound or of a quality inferior to that contracted or otherwise not in accordance with the contract the Contractor shall, on demand in writing which shall be made within twelve months of the completion of the work from the Engineer or his nominee specifying the work, materials or articles complained of notwithstanding that the same may have been passed, certified and paid for forthwith rectify, or remove and reconstruct the work so specified in whole or in part, as the case may require or as the case may be, remove the materials or articles so specified and provide other proper and suitable materials or articles at his own charge and cost. In the event of the failing to do so within a period specified by the Engineer or his nominee in his demand aforesaid, then the Contractor shall be liable to pay compensation at the same rate as under Clause 49 of the contract (for non-completion of the work in time) for this default.

In such case the Engineer or his nominee may not accept the item of work at the

rates applicable under the contract but may accept such items at reduced rates as the competent authority may consider reasonable during the preparation of on account bills or final bill if the item is so acceptable without detriment to the safety and utility of the item and the structure or he may reject the work outright without any payment and/or get it and other connected and incidental items rectified, or removed and re-executed at the risk and cost of the Contractor. Decision of the Engineer or his nominee to be conveyed in writing in respect of the same will be final and binding on the Contractor.

74 Action where no Specifications are specified

In the case of any class of work for which there are no such specifications as referred to in Clause 16, such work shall be carried out in accordance with the Bureau of Indian Standards Specifications. In case there is no such specification in Bureau of Indian Standards, the work shall be carried out as per manufacturer's specifications. In case there are no such specifications as required above, the work shall be carried out in all respects in accordance with the instructions and requirements of the Engineer or his nominee.

75 Bribes

75.1 If the Contractor, or any of his Sub Contractors, agents or servants gives or offers to give to any person any bribe, gift, gratification or commission as an inducement or reward for doing or forbearing to do any action in relation to the Contract or any other contract with the Employer, or for showing or forbearing to show favour or disfavor to any person in relation to the Contract or to any other contract with the Employer, then the Employer may enter upon the Site and the works and terminate the employment of the Contractor and the provisions of Clause 59 hereof shall apply as if such entry and termination had been made pursuant to that Clause.

(i) The bidders shall give an undertaking that they have not made any payment or illegal gratification to any person/authority connected with the bid process so as to influence the bid process and have not committed any offence under the Prevention of Corruption Act in connection with the bid.

(ii) The bidders shall disclose any payments made or proposed to be made to any intermediaries (agents etc) in connection with the bid.

76 Details to be Confidential

76.1 The Contractor shall treat the details of the contract as private and confidential, save insofar as may be necessary for the purposes thereof, and shall not publish or disclose the same or any particulars thereof in any trade or technical paper or elsewhere without the previous consent in writing of the Employer. If any dispute arises as to the necessity of any publication or disclosure for the purpose of the Contract the same shall be referred to the decision of the Employer whose award shall be final.

77 Contractor's Temporary works, office etc

77.1 The Contractor shall submit to the Engineer for his approval not less than 15 days before commencement of erection of any part of Temporary Works, drawings and detailed proposals for the method of construction of Temporary works such as office, store, false work and temporary platforms, pre-casting yard, workshop, etc. which he intends to construct for the execution of the contract and no such work shall be constructed before obtaining the written approval of Engineer or his nominee. These temporary works, office, store etc. shall be erected at or near the work area subject to approval of the Employer and the land space for the same will be allotted free of ground rent to the extent available. The Contractor shall

obtain permission for any Temporary Works and would ensure that during execution of works the statutory requirements of the concerned authorities such as Cochin Port Trust, Police, Customs, etc. would be complied with.

77.2 Submission of Reports, Returns etc

All reports, statements, returns, drawings, diagrams etc. which the Contractor is required to submit to the Engineer during the progress of the Works, shall be furnished in triplicate without any additional cost.

78 Water Supply

78.1 Water required for the construction works including curing work shall be arranged by the Contractor on his own at his cost.

79 Power Supply

79.1 The Electricity connection for lighting, welding and other mechanical works to the extent available will be made available by the Employer within the Port area. Drawing of power lines/cables etc from the available source of supply of power to the actual work site, providing switches and making connections etc. shall be arranged by the Contractor at his cost. The temporary lines and connections by the Contractor shall be approved by the Engineer's representative before availing power. The Contractor shall provide Energy Meter to read consumption in units.

79.2 The Contractor shall indicate his requirement of power to the Engineer within 15 days from the date of the letter of acceptance of the tender. The Contractor shall pay to the Employer, the power charges as per the prevailing Tariff schedule of Cochin Port Trust in force during the work of the Contractor. The Contractor shall also pay the connection and disconnection charges as applicable.

79.3 The Contractor shall submit a complete drawing of the power points, wiring, diagram indicating all electrical loads, earthing etc. in complete shape along with the completion report. The Energy Meter provided is calibrated by Kerala State Electrical Inspectorate /TMR division, KSEB and such a Certificate to be produced. For non supply of power at any stage port will not be responsible and the Contractor shall not have any claim whatever for loss or damage.

79.4 If there is any disruption in the power supply due to supply failure/restrictions imposed by the Kerala State Electricity Board, the department shall not be held responsible and the Contractor has to make suitable alternative arrangements like generator, welding set etc. at their cost.

80 Taxes and Duties

80.1 The Contractor shall pay Sales Tax, Excise Duty and other levies as applicable from time to time in respect of all materials, equipment and other items purchased for the work.

80.2 Sales / Turnover Tax on Works Contract

Deduction of Sales/Turnover tax on works Contract shall be made by the Employer from each certificate of payment to the Contractor at the rate applicable for such Contractors, as TDS or such other rates as may be specified by the State Government from time to time. TDS certificates will be issued to the Contractor which he may produce before the Tax Authority for adjustment against his tax liability as per assessment.

80.3 Income Tax

The Contractor and his staff shall be responsible for payment of all personal income taxes to the concerned authorities as per the law in force from time to time. Deduction of Income Tax shall be made by the Employer from each certificate of payment to the Contractor at the rate of 2% plus surcharge or such

other rates as may be specified by the Central Government from time to time, on the gross amount of the Contractor's bill for payment.

81 Noise and Disturbance

81.1 All works shall be carried out without unreasonable noise and disturbance. The Contractor shall indemnify the Employer from and against any liability for damages on account of noise or other disturbance created while or in carrying out the work and from and against all claims demands proceedings damages costs charges and expenses whatsoever in regard or in relation to such liability.

82 Safety Code

82.1 Necessary Indian Dock Safety regulations for the safety purpose shall be adhered to by the Contractor and he will be held responsible for any violations of the same. The set of such conditions (regulation) is available with Cochin Port Trust and the Contractor is required to go through it before tendering.

82.2 Besides the above, the Contractor shall also scrupulously adhere to and observe the following safety codes:

- (i) The Contractor has to provide sufficient barricades to site of work so that traffic plying nearby should not damage the recently concreted work. In case of any damage on account of above, the entire responsibility will remain with Contractor and nothing extra will be paid on this account.
- (ii) Suitable and strong scaffolds should be provided for the workmen for all work that cannot be safely done from ground.
- (iii) No portable single ladder shall be over 8 meters in length. The width between the side rails shall not be less than 30 cm (clear) and the distance between the two adjacent rungs shall not be more than 30 cm.
- (iv) Hoisting machines and tackles used in the works including their attachments, anchorage and supports shall be in perfect condition as per stipulations of the relevant Rules. The ropes used an hoisting or lowering materials or as means or suspension shall be of durable quality and adequate strength and free from defects.
- (v) The excavated material shall no be placed within 1.5 meters of the edge of the trench or half of the depth of the trench, whichever is more. All trenches and excavation shall be provided with necessary fencing to lighting. Every opening in the floor of a building or in a working platform be provided with suitable fence to prevent the fall of persons or materials. No floor, roof or other parts of the structure shall be so overloaded with debris or materials as to render it unsafe.
- (vi) Workers employed on mixing and handling materials such cement, cement mortars concrete, lime mortar and asphalt shall be provided with protective footwear and rubber hand gloves and thin cloth for covering face and head.
- (vii) Those engaged in welding work shall be provided with welder protective eye shield and glove.
- (viii) All safety rules shall be strictly followed while working on live electrical systems or installations as stipulated in the relevant Rules.

83 Port Trust Rules

83.1 The Contractor shall observe the Conservancy Rules relating to the harbour and shall always take such necessary additional steps to keep the harbour waters free of noxious or unhygienic matters coming from his works as are required by the Employer. Under no circumstances shall inflammable materials be allowed to spill into the harbour waters.

83.2 The Contractor shall always observe and comply with the working rules and regulations of the Port Trust in force or as issued from time to time.

83.3 The Contractor's plants, equipments, floating crafts, dredgers, materials etc. which are brought to site for facilitating the proper execution of the contract work within the port area are not liable to port dues and charges like wharfage, berth hire and other charges during the period of contract and until expiry of defect liability period.

84 Execution of work

84.1 The Contractor shall be required to execute the work in such a way so as not to cause any damage, hindrance or interference with port activities going on in the area or nearby. He should not also deposit the materials at such places which may cause inconvenience to the public and the work going on in the nearby area. The Contractor shall have to make good all damages done by him to the structures nearby while executing the work and no extra payment shall be made to him on that account.

84.2 All the materials required to be used in the work shall have to be got approved from the Engineer-in-Charge before stacking at the site of work.

84.3 Barricading, including proper lighting arrangement in the night at the required places shall have to be provided by the Contractor at his own cost, including necessary arrangements for proper movement of traffic by carefully maintained approaches and road diversions with suitable sign boards for indications of road signs etc. as directed by the Engineer-in-Charge.

85 Drawings & Designs

(a) General details of the works are shown on the drawings accompanying the tender document. The Engineer will supply to the Contractor from time to time during the progress of the works such further working drawings as will be necessary in his opinion for the proper and adequate execution and maintenance of the Works in accordance with the Engineer's designs and/or any modification thereof as decided by the Engineer and the Contractor shall carry out the work in accordance with the said working drawings. Two sets of such working drawings will be issued. If the Contractor requires more sets he will have to make his own arrangement at his cost.

Residual Design, Detailing & Engineering: - Generally, detailed design and engineering of the work shall be provided by the Engineer. During execution of the work the residual design, detailing and engineering, if needed, is to be carried out by the Contractor at no extra cost to the Employer. Such design, detailing & engineering shall be got approved by the Contractor from the Engineer. For equipments/ Installations detailed drawings need to be produced by the Contractor at no extra cost to the Employer. Such detailing & engineering shall be got approved by the Contractor from the Engineer.

(b) In the event of the Contractor proposing any alteration/ modification to the Engineer's design, detail, method of construction, he shall at his own expenses prepare and submit for approval of the Engineer copies in duplicate (in the first instance) of detailed working drawings which may be required for such alteration/ modification and at the same time call the attention of the Engineer to any alternative detail or modification of the contract drawings which the Contractor may wish to make at least 30 days prior to the commencement of the work or part of the work to which such drawings relate. The Contractor shall at the same time, if so required by the Engineer, furnish calculation sheets in duplicate relating to the strength and anticipated deflections in

respect of such altered/ modified works. The Engineer will, after any such alteration which he may approve, record on the copies as amended his approval and will return one copy of the drawings and calculation sheets to the Contractor, who shall carryout the work in accordance therewith. The Contractor shall forward to the Engineer three additional copies of the working drawings and calculation sheets as approved in additions to these working drawings and calculation sheets as approved. In addition to these, working drawings are also to be submitted (the same procedure as in the case of the Contractor) in respect of any work proposed to be executed by sub-Contractors. The approval of the Engineer of all or any of the calculation sheets, drawings shall not relieve the Contractor of responsibility in connection with the execution of the altered/ modified or Sub Contractor's work.

- (c) Three complete sets of tracing film of all drawings showing every and all works 'As Made' under the Contract shall be made by the Contractor at his own expense and delivered to the Engineer within one month of the completion of the various sections of the work or at such times as directed by the Engineer. All departure /alteration /modifications from the Contract Drawings and supplementary working drawings issued by the Engineer also shall be incorporated in the "As Built" drawings. The drawings shall be fully dimensioned, of an approved size and as approved by the Engineer.

86 Monsoon Period

- 86.1 Normally Monsoon period will be reckoned from 1st June to 30th September.

87 Reports

The following reports shall be submitted for review as an input to the Management meeting to be held as per Clause No 31 of Conditions of Contract

87.1 Daily reports

The Contractor shall submit daily report indicating daily activities, weather condition, actual manpower, equipment and the materials arriving on site.

87.2 Monthly Reports

Monthly progress reports shall be prepared by the Contractor and submitted to the Engineer in triplicate. The first report shall cover the period up to the end of the first calendar month following the Commencement Date. Reports shall be submitted monthly thereafter, each within 7days after the last day of the period to which it relates. Reporting shall continue until the Contractor has completed all work, which is known to be outstanding at the completion date, stated in the Taking-Over Certificate for the Works.

Each report shall include:

- a) Charts and detailed descriptions of progress, including each stage of design (if any), Contractor's Documents, procurement, manufacture, delivery to Site, construction, erection and testing; and including these stages for work by each Sub-Contractor,
- b) Photographs in hardcopy & digital copy and videography in two sets showing the various stages of progress on the Site monthly;
- c) For the supply of manufactured items, the name of the manufacturer, manufacture location, percentage progress, and the actual or expected dates of:
 - (i) Commencement of manufacture,
 - (ii) Contractor's/ Engineer's inspections,
 - (iii) Tests,
 - (iv) Shipment and arrival at the Site;

- d) Copies of quality assurance documents, test results and certificates of Materials;
- e) Safety statistics, including details of any hazardous incidents and activities relating to environmental aspects and public relations; and
- f) Comparisons of actual and planned progress, with details of any events or circumstances which may jeopardise the completion In accordance with the Contract, and the measures being (or to be) adopted to overcome delays.

88 Completion Documents

- 88.1 To treat that the work has been completed and issue a final payment certificate, the following documents will be deemed to form the completion documents:
- i) The Technical documents according to which the work was carried out.
 - ii) The set of construction drawings showing therein the modifications and corrections made during the course of execution signed by the Engineer.
 - iii) Certificates of final levels and dimensions as set out for various works.
 - iv) Certificates of tests performed for various works.
 - v) "As Built" Drawings.

89 Changes in firm's Constitution to be intimated

The Contractor shall intimate the Engineer in writing of any change made in the constitution of the firm

90 Indemnities

The Contractor shall indemnify and hold harmless the Employer, the Employer's Personnel, and their respective agents, against and from all claims, damages, losses and expenses (including legal fees and expenses) in respect of:

- (a) Bodily injury, sickness, disease or death, of any person whatsoever arising out of or in the course of or by reason of the Contractor's design (if any), the execution and completion of the Works and the remedying of any defects, unless attributable to any negligence, willful act or breach of the Contract by the Employer, the Employer's Personnel, or any of their respective agents, and
- (b) Damage to or loss of any property, real or personal (other than the Works), to the extent that such damage or loss:
 - (i) Arises out of or in the course of or by reason of the Contractor's design (if any), the execution and completion of the Works and the remedying of any defects, and
 - (ii) Is attributable to any negligence, willful act or breach of the Contract by the Contractor, the Contractor's Personnel, their respective agents, or anyone directly or indirectly employed by any of them.

G. Salient Features Of Some Major Laws Applicable To Establishments Engaged In Construction Work.

- (a) Workmen Compensation Act 1923:- The Act provides for compensation in case of injury by accident arising out of and during the course of employment.
- (b) Payment of Gratuity Act 1972: Gratuity is payable to an employee under the Act on satisfaction of certain conditions on separation if an employee has completed 5 years service or more on death at the rate of 15 days wages for every completed year of service. The Act is applicable to all establishments employing 10 or more employees.
- (c) Employees P.F and Miscellaneous Provision Act 1952: The Act Provides for monthly contributions by the Employer plus workers @ 12% / 8.33%. The benefits payable under the Act are:
 - (i) Pension or family pension on retirement or death, as the case may be.
 - (ii) Deposit linked insurance on the death in harness of the worker.

(iii) Payment of P.F accumulation on retirement/death etc.

The employees employed by the Contractor for the work of Port Trust have to be enrolled under the relevant scheme of the EPF & MP Act 1952. The Contractor shall produce documents pertaining to the same for verification to the Engineer/his nominee. Further the Contractor has to pay the necessary monthly contributions to the said scheme in respect of the employees employed by him for the work of CoPT and shall produce necessary document to show that the monthly contribution in respect of these employees due to the said scheme are paid.

In case the contractor has not paid the EPF contribution same will be recovered in the running bill and paid to the EPF Organization. Any delay in payment of contribution payable under the Act may be recovered as an arrear of Land Revenue

- (d) Maternity Benefit Act 1951:-The Act provides for leave and some other benefits to workmen/ employees in case of confinement or miscarriage etc.
- (e) Contract Labour (Regulation & Abolition) Act 1970:-The Act provides for certain welfare measures to be provided by the Contractor to contract labour and in case the Contractor fails to provide, the same are required to be provided, by the Principal Employer by Law. The Principal Employer is required to- take Certificate of Registration and the Contractor is required to take license from the designated Officer. The Act is applicable to the establishments or Contractor of Principal Employer if they employ 20 or more contract labor.
- (f) Minimum Wages Act 1948: The Employer is supposed to pay not less than the Minimum Wages fixed by appropriate Government as per provisions of the Act if the employment is a scheduled employment Construction of Buildings, Roads, Runways are scheduled employment.
- (g) Payment of Wages Act 1936:-It lays down as to by what date the wages are to be paid when it will be paid and what deductions can be made from the wages of the workers.
- (h) Equal Remuneration Act 1979:-The Act provides for payment of equal wages for work of equal nature to Male and Female workers and for not making discrimination against Female employees in the matters of transfers, training and promotions etc.
- (i) Payment of Bonus Act 1965: The Act is applicable to all establishments employing 20 or more employees. The Act provides for payments of annual bonus subject to a minimum of As per the provision of the Act and amendment issued from time to time. The Act does not apply to certain establishments. The newly set-up establishments are exempted for five years in certain circumstances. Some of the State Governments have reduced the employment size from 20 to 10 for the purpose of applicability of this Act.
- (j) Inter-State Migrant workmen's (Regulation of Employment & Conditions of Service) Act 1979:The Act is applicable to an establishment which employs 5 or more inter-state migrant workmen through an intermediary (who has recruited workmen in one state for employment in the establishment situated in another state). The Inter-State migrant workmen, in establishment to which this Act becomes applicable, are required to be provided certain facilities such as housing, medical aid, travelling expenses from home upon the establishment and back,
- (k) The Building and Other Construction workers (Regulation of Employment and Conditions of Service) Act 1996 and the Cess Act of 1996:-All the

establishments who carry on any building or other construction work and employs 10 or more workers are covered under this Act. All such establishments are required to pay cess at the rate not exceeding 2% of the cost of construction as may be modified by the Government. The Employer of the establishment is required to provide safety measures at the Building or Construction work and other welfare measures, such as Canteens, First-Aid facilities. Ambulance, Housing accommodations for workers near the work place etc. The Employer to whom the Act applies has to obtain a registration certificate from the Registering Officer appointed by the Government.

(l) ESI Act, 1948:-

- (i). As per the Govt. Notification dt. 20.7.09, Cochin Port Trust has registered under the ESI Act with ESI Corporation and provision of ESI Act, 1948 are applicable to contract/casual employees drawing wages/Salary upto Rs.15,000/- per month and working in Cochin Port Trust . Workers covered under ESI Act, are entitled for full medical care for self and family. Besides, cash benefit in the event of sickness, maternity and employment injury. Accordingly, the contractual/casual employees drawing wages upto Rs. 15,000/-per month employed either directly by Port Trust or through contractor are covered under ESI Act, 1948. It is obligatory on the part of the employer to calculate and remit ESI contribution comprising of employers' share of 4.75% plus employees' share of 1.75% which is payable on or before 21st of the following month, to which the salary relates.
- (ii). In case the Contractor employs more than 20 employees, they should register their name with ESI scheme as per ESI Act, 1948 and obtain ESI Code. Both Employers share of 4.75% and Employees contribution of 1.75 % (recovered from employees), totally 6.5% to be paid as contribution to ESI in their Code on or before 21st of following month to which the salary relates and acknowledgment for the same shall be submitted to the Port while claiming the bill. The bill without the acknowledgement of ESI contribution will not be entertained. In case the contractor has not paid the ESI contribution same will be recovered in the running bill and paid to the ESI Corporation in contractor's code. Any delay in payment of contribution payable under the Act may be recovered as an arrear of Land Revenue.
- (iii). In case the contractor employs less than 20 employees, the list of employees' name, their father's name, identification proof, one passport photo shall be submitted to the Port Trust. The contribution of ESI amount, both Employers share of 4.75% and Employees of 1.75% (recovered from Employees salary), totally 6.5% shall be paid by the contractor in the Cochin Port Trust Code on or before 21st of the following month to which the salary relates or otherwise payment to the contractor will be withheld. If the contractor fails to comply with the above instruction, then the Principal Employer (Cochin Port Trust) will make payment to the ESI Corporation. Such amount will be deducted from any amount due to the contractor. Any delay in payment of contribution payable under the Act may be recovered as an arrear of Land Revenue.
- (iv). As per the above Government Notification
 - i) All intending tenderer at the time of tender shall disclose all necessary documents as to whether they are covered under ESI Act or not.
 - ii) ii) in case they are covered under ESI Act, they have to furnish the details of registration.

CONTRACT DATA

Items marked "N/A" do not apply in this Contract.

Sl. No.	Description	Reference Cl. No.
1	The following documents are also part of the Contract	
	The Schedule of other Contractors i) ii)	(8.2)
	The Schedule of Key personnel i) ii)	(9)
2	The Employer is	(1)
	The Board of Trustees, Cochin Port Trust, Cochin -9	
	Name of Authorized Representative:	
	Name : Shri / Smt..... [INSERT NAME] The Chairman, Cochin Port Trust Cochin -9	
3	The Engineer is	
	Name : Shri [INSERT NAME] Chief Mechanical Engineer/Chief Mechanical Engineer Cochin Port Trust, Cochin-9	
	Name of Nominee is	
	Name : Shri..... [INSERT NAME] [INSERT DESIGNATION OF THE OFFICER] Cochin Port Trust Cochin-9	
4	Name of Contract :- Tender no: [INSERT TENDER NO.]	(1)
5 [INSERT NUMBER] copies of Contract Agreement shall be furnished by the Contractor	[7.1]
6	Tender document and other data are available at [INSERT ADDRESS OF OFFICE]	(7.2)
7	The Intended completion Date for the whole of the Work is [INSERT CONTRACT PERIOD] Months / Days with the following milestones:	(17,28)

Sl. No.	Description	Reference Cl. No.	
8	Milestone dates:		
	Physical works to be completed		Period from the date of receipt of LoA to proceed with the work
9	<p>The following shall form part of the Contract Document:</p> <ol style="list-style-type: none"> (1) Form of Agreement (2) Letter of Acceptance (3) Contractor's Bid (4) Contract Data (5) Conditions of Contract including Special Conditions of Contract (6) Specifications (7) Drawings (8) Bill of quantities and (9) Any other documents listed in the Contract Data as forming part of the Contract. (10) Correspondence exchanged after the opening of the Bid and before the issue of Letter of Acceptance by which the Condition of Contract are amended, varied or modified in any way by mutual consent (to be enumerated). 	(2.3)	
10	The Contractor shall submit a Program for the Works within ---- days [INSERT PERIOD] of date of the Letter of Acceptance.	(27)	
11	<p>The site possession date The site will be handed over withindays [INSERT PERIOD] after issue of LoA and the site is free from encumbrances.</p>	(21)	
12	The start date shall be days [INSERT PERIOD] from the date of receipt of the Letter of Acceptance (LoA) by the Contractor.	(1)	
13	The site is located at		
14	The Defects Liability Period is [INSERT PERIOD AS APPLICABLE]	(35)	
15	The minimum insurance cover for physical property, injury and death is Rs.lakhs (Rupeeslakhs) [INSERT AMOUNT] per occurrence with the number of occurrences unlimited. After each occurrence, Contractor will pay additional premium necessary to make insurance valid always.	(13)	

Sl. No.	Description	Reference Cl. No.
16	The following events shall also be Compensation Events: (Add the events as applicable to the Contractor) 1.	(44)
17	The period between Programme updates shall be 30 days.	(27)
18	The amount to be withheld for late submission of an updated Programme shall be Rs. [INDICATE THE AMOUNT]	(27)
19	The language of the Contract documents is English.	(3)
20	The law, which applies to the Contract, is the law of Union of India.	(3)
21	The currency of the Contract is Indian Rupees.	(46)
22	The proportion of payments retained (retention money) shall be 5% from each bill subject to a maximum of 5% of the contract price or value of work done whichever is higher.	(48)
23	The maximum amount of liquidated damages for the whole of the works is 10% of the contract price.	[49]
24	The amounts of the advance payments :	[51]
	The advance payments as applicable to the contract are: [INSERT AS APPLICABLE] 1. 2. 3.	
25	Repayment of advance payment for mobilization : [INSERT ANY SPECIAL CONDITIONS]	[51]
26	Repayment of advance payment for Construction and equipment: [INSERT ANY SPECIAL CONDITIONS]	[51]
27	Repayment of secured advance: [INSERT ANY SPECIAL CONDITIONS]	
28	The date by which “as-built” drawings are required is within 60 days of issue of certificate of completion of whole or section of the work, as the case may be.	(58)
29	The amount to be withheld for failing to supply “as built” drawings and/or operating and maintenance manuals by the date required is Rs..... [INDICATE THE AMOUNT]	(58)
30	Schedule of Rates Applicable: DSR..... +%	

SECTION II
COCHIN PORT TRUST
No. F2/T-22/HT Supply-IOCL LPG-Puthuvype/2020-M
PROVIDING HT SUPPLY TO M/S. INDIAN OIL CORPORATION LIMITED
FOR THE LPG IMPORT TERMINAL AT PUTHUVYPEEN

2. FORM OF SECURITIES (ANNEXURE A & B)

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SECTION -II
COCHIN PORT TRUST
MECHANICAL ENGINEERING DEPARTMENT
 Tender No: **F2/T-22/HT Supply-IOCL LPG-Puthuvype/2020-M**
“PROVIDING HT SUPPLY TO M/S. INDIAN OIL CORPORATION LIMITED FOR
THE LPG IMPORT TERMINAL AT PUTHUVYPEEN”

**PROFORMA OF BANK GUARANTEE FOR PERFORMANCE GUARANTEE/
 SECURITY DEPOSIT**

(To be executed on non-judicial Stamp Paper of appropriate value)

[The bank, as requested by the successful Tenderer, shall fill in this form in accordance with the instructions indicated]

In consideration of the Board of Trustees of the Port of **[insert name of Port]** incorporated by the Major Port Trusts Act, 1963 as amended by Major Port Trust (Amendment) Act 1974 (hereinafter called “The Board” which expression shall unless excluded by or repugnant to the context or meaning thereof be deemed to include the Board of Trustees of the Port of **[insert name of Port]**, its successors and assigns) having agreed to exempt _____ (hereinafter called the “Contractor”)

(Name of the Contractor/s)

from the demand under the terms and conditions of the Contract, vide _____’s letter No. _____

(Name of the Department)

date _____ made between the Contractors and the Board for execution of _____ covered under Tender No. _____ dated _____ (hereinafter called “the said contract”) for the payment of Security Deposit in cash or Lodgement of Government Promissory Loan Notes for the due fulfilment by the said Contractors of the terms and conditions of the said Contract, on production of a Bank Guarantee for Rs. _____ (Rupees _____) only we, the (Name of the Bank and Address) _____ (hereinafter referred to as “the Bank”) at the request of the Contractors do hereby undertake to pay to the Board an amount not exceeding Rs. _____ (Rupees _____) only against any loss or damage caused to or suffered or which would be caused to or suffered by the Board by reason of any breach by the Contractors of any of the terms and conditions of the said contract.

2. We, _____, _____, do hereby
 (Name of Bank) (Name of Branch)

undertake to pay the amounts due and payable under this guarantee without any demur merely on a demand from the Board stating that the amount claimed is due by way of loss or damage caused to or which would be caused to or suffered by the Board by reason of any breach by the Contractors of any of the terms and conditions of the said contract or by reason of the Contractors failure to perform the said contract. Any such demand made on the Bank shall be conclusive as regards the amount due and payable by the Bank under this Guarantee. However, our liability under this guarantee shall be restricted to any amount not exceeding Rs. _____ (Rupees _____) only.

3. We, _____(Name of Bank and Branch) _____, undertake to pay to the

Board any money so demanded notwithstanding any dispute or disputes raised by the Contractor(s) in any suit or proceeding pending before any Court or Tribunal relating thereto our liability under this present being absolute and unequivocal. The payment so made by us under this bond shall be a valid discharge of our liability for payment there under and the Contractor(s) shall have no claim against us for making such payment.

4. We, _____(Name of Bank and Branch) further agree with the Board that the guarantee herein contained shall remain in full force and effect during the period that would be taken for performance of the said contract and that it shall continue to be enforceable till all the dues of the Board under or by virtue of the said contract have been fully paid and its claims satisfied or discharged or till the _____

(Name of the user department)

of the said certifies that the terms and conditions of the said contract have been fully and properly carried out by the said Contractors and accordingly discharge this guarantee. PROVIDED HOWEVER that the Bank shall be the request of the Board but at the cost of the Contractors, renew or extend this guarantee for such further period or periods as the Board may require from time to time.

5. We, _____ further agree with the Board
(Name of Bank and Branch)

that the Board shall have the fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the said contract or to extend the time of performance by the said contract or to extend the time of performance by the said Contractors from time to time or to postpone for any time or from time to time any of the powers exercisable by the Board against the said Contractors and to forebear or enforce any of the terms and conditions relating to the said contract and we shall not be relieved from our liability by reason of any such variation or extensions being granted to be Contractors or for any forbearance, act or omission on the part of the Board or any indulgence shown by the Board to the Contractors or by any such matter or thing whatsoever which under the law relating to sureties would, but for this provision, have effect of so relieving us.

6. This guarantee will not be discharged due to the change in the constitution of the Bank or the Contractor(s).

7. It is also hereby agreed that the Courts in **[insert city]** would have exclusive jurisdiction in respect of claims, if any, under this Guarantee.

8. We, _____ Bank lastly undertake not to revoke this guarantee during its currency except with the previous consent of the Board in writing.

9. Notwithstanding anything contained herein :

a) Our liability under this Bank Guarantee shall not exceed Rs. _____
(Rupees _____ only);

b) this Bank Guarantee shall be valid upto ___*_____; and

c) we are liable to pay the guarantee amount or any part thereof under this Bank Guarantee only and only if you serve upon us a written claim or demand on or before _____ (date of expiry of Guarantee).”

Date _____ day of _____ 20

For (Name of Bank)

(Name)

Signature

* The date will be thirty (30)days after the end of the period of Defect Liability as specified in the Contract.

SECTION -II
COCHIN PORT TRUST
MECHANICAL ENGINEERING DEPARTMENT
Tender No: F2/T-22/HT Supply-IOCL LPG-Puthuvype/2020-M
“PROVIDING HT SUPPLY TO M/S. INDIAN OIL CORPORATION LIMITED FOR
THE LPG IMPORT TERMINAL AT PUTHUVYPEEN”

PROFORMA OF BANK GUARANTEE FOR ADVANCE
(To be submitted on Non-Judicial Stamp Paper of appropriate value)

Bank Guarantee No _____ dated _____

Amount of Guarantee Rs. _____

Guarantee cover from _____ to _____

Last date of lodgment of claim

In consideration of Board of Trustees of Cochin Port Trust (hereinafter called “Port Trust”) which expression shall include all their successors and assignees having agreed to pay advance of Rs. _____ (Rupees _____ only) repayable with interest @ _____ % per annum to _____ (Name & Address of contractor) (hereinafter called the “CONTRACTOR”) which expression shall include their successors and assignees for the contract for the work of _____ (Name of work) evidenced by the offer of the Contractor dated..... and accepted by the Port Trust forming the contract and the work order No..... dated,..... for the work of (name of work) issued by the Port Trust and the formal stamped agreement to be entered into between parties in the above, the said amount and interest being recoverable from the running bills of the contractor on pro-rata basis as per terms of agreement, we (Name of Bank) having our Head office at (hereinafter referred to as “the Bank”) do hereby undertake to pay The Cochin Port Trust an amount of Rs.....(Rupees.....only) with interest against any loss or damage caused to or would be caused to or suffered by the Port Trust by reason of any breach by the said contractor of any of the terms or conditions contained in the said agreement, making it impossible or difficult to recover the said mobilisation advance of Rs.....(Rupees.....only) or part thereof or interest thereon we (Name of the Bank)do hereby undertake to pay the amounts due and payable under the guarantee without any demur, merely on demand of The Cochin Port Trust by reason of any breach by the said contractor of any of the terms and conditions contained in the said agreement or by the reason of contractor’s failure to perform the said agreement. Any such demand made on the Bank shall be conclusive not only as regards to contractor’s failure but also as regards the amount due and payable by the Bank under this guarantee. However, our liability under this guarantee will be restricted to an amount of Rs.....(Rupees..... only) with interest as per the agreement.

We, (Name of the Bank) further agree the guarantee herein contained will remain in full force and affect during the period that would be taken for the recovery of the loan and that it shall continue to be live and enforceable till all the amounts due with interest thereon have been fully recovered and its claims satisfied or discharged or till The Cochin Port Trust certifies that the amount outstanding under the advance has been fully recovered from the contractor and accordingly discharged the guarantees. Unless a demand or claim under this guarantee is made on us in writing on or before (date of the expiry) we shall be discharged from all liability under this guarantee thereafter.

We, (Name of the Bank) further agree with the Port Trust that the Port Trust shall have the fullest liberty without or consent and without affecting in any manner or obligation hereunder to vary any of the terms and conditions regarding the recovery or repayment and we shall not be relieved from our liability by reason of any such variation or extension being granted to the said contractor or any forbearance, act or omission on the part of Cochin Port Trust or any indulgence by the Port Trust to the contractor or in such matter or things whatsoever which under the law relating to sureties would but for this provision have the effect of so relieving us.

Notwithstanding anything contained herein:

- (i) Our liability under this bank guarantee shall not exceed Rs.....(Rupees.....)
- (ii) This bank guarantee shall be valid upto.....
- (iii) Our liability to make payment shall arise and we are liable to pay the guaranteed amount or any part thereof under this guarantee, only if you serve upon us a written claim or demand in terms of this guarantee on or before.....

We, (Name of the Bank) lastly undertake not to revoke this guarantee during its currency except with the previous consent of the Port Trust in writing.

Dated this the.....day of.....(year)

For (Name of Bank)

(Signature)

SECTION III

**SECTION III
COCHIN PORT TRUST
No. F2/T-22/HT Supply-IOCL LPG-Puthuvype/2020-M
PROVIDING HT SUPPLY TO M/S. INDIAN OIL CORPORATION LIMITED FOR
THE LPG IMPORT TERMINAL AT PUTHUVYPEEN**

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PROVIDING HT SUPPLY TO M/S. INDIAN OIL CORPORATION LIMITED
FOR THE LPG IMPORT TERMINAL AT PUTHUVYPEEN

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FOR THE LPG IMPORT TERMINAL AT PUTHUVYPEEN

(PLEASE NOTE: The IOCL LPG Terminal being a project of National importance, the power supply shall be made available at the terminal on or before 15th June 2021 as per Schedule. The bidders shall ensure that the project is completed as per schedule and no extension will be granted)

1. GENERAL DESCRIPTION OF WORK

1. General

Where it is mentioned in the Specifications that the Contractor shall perform certain Work or provide certain facilities, it is understood that the Contractor shall do so at his own Cost.

The materials, design and workmanship shall satisfy the relevant Indian Standard, the Specification and conditioned herein referred to. Where the Specifications stipulate requirement in addition to those contained in the Standard codes and Specifications, these additional requirements shall also be satisfied.

2. Scope of work

- a. Supply, laying, testing and commissioning of approximately 3.3 KM of 3C x 300 sq.mm, 11KV FRLSH XLPE cable from the RMU at the entrance of road towards MULT in the Puthuvypin main Road to the IOCL LPG storage terminal near to Light House by open trench/HDD/through underground pipe.
- b. Supply, installation, testing and commissioning of 5 Nos. 11 KV SF6 single (+DC+) LB Switch Unit along the cable route at different locations for looping and terminating the HT cables.
- c. Supply, installation and commissioning of 2 Nos. 11 KV SF6 LBS RMU Unit for tapping the HT supply.
- d. Installation and commissioning of one number Commercial Metering Unit panel inside the IOCL storage terminal premises.
- e. Supply and providing end termination kit for HT cables.
- f. Earthing the entire installation.
- g. Getting CEA approval and Testing & Commissioning the entire system

3. Site conditions

3.1 Location

The project area is at PUTHUVYPEEN, Ernakulam Dist.

3.2 Tide and Flood Levels

The various tidal levels in the area as per Naval Hydrographic Chart No.2004 are as indicated below for the general guidance to the tenderer.

<u>Tide</u>	<u>Levels with reference to Port Chart datum (in metres)</u>
Highest High Water Level	: +1.20m
Mean High Water Spring (MHWS)	: +0.92m
Mean Low Water Spring (MLWS)	: +0.80m
Mean Sea Level (MSL)	: +0.582m
Mean High Water Neap (MHWN)	: +0.60m
Mean Low Water Neap (MLWN)	: +0.30m
Lowest Low Water Level	: +0.20m

3.3 **Waves**

The work site is in the inner harbour area where generally calm conditions prevail throughout the year

3.4 **Wind**

Wind at Cochin is highly influenced by the land and sea breezes. Wind direction changes from north-east during morning hours to west during evening for the period of October to May. During peak of south-west monsoon, especially from June to September, predominant wind direction remains south-west both during morning and evening hours. Due to strong monsoon winds, effect of land winds is not dominant during south-west monsoon. During the non-monsoon periods, the predominant wind direction is from north east during the morning and west during the evening which shows influence of land breeze.

3.5 **Rainfall**

The climate is characterized by dry and wet seasons. The wet seasons starts in late May and ends in November. During this period, two monsoons pass by one after another. The major monsoon is south-west monsoon which lasts from June to September. This is followed by north-east monsoon during October and November. The average annual rainfall is about 3000mm; and the major portion is during south-west monsoon.

3.6 **Temperature**

Cochin experiences moderate temperatures throughout the year. The temperature varies from 22°C to 34°C. The low temperature occurs during the southwest monsoon, December and January. Daytime temperature goes upto 30°C even during this period. The hot months are from March to May.

4. **Drawings**

The drawings enclosed with the tender document are to provide some idea of the job only and are preliminary and for tender purpose and are by no means complete and final and do not show the full range of the work under the scope of the contract. Work shall be carried out only on the basis of drawings marked "Issued for Construction" with addition, alteration, modifications, if any made to aforesaid drawings as required from time to time and also according to other drawings that would be supplied to the contractor from time to time

5. **Time Schedule and monitoring of progress**

5.1 Tenderer shall prepare and attach with the tender a detailed work schedule [preferably in MS Project / Primavera] indicating key activities and critical items for completing the work within the stipulated contract period. This time schedule forms the basis for monitoring the progress of work. Issue of working drawings by the department will be regulated as per the time schedule approved by the department.

5.2 The contractor shall furnish to the Engineer monthly progress reports of the work during execution in the approved proforma indicating delay, if any, its reason and proposal to cover up the delay.

6. **Facilities to be provided by the Port**

6.1 **Contractor's work area:**

An area at PUTHUVYPEEN will be made available to the Contractor for carrying out the work.

6.2 **Power**

Electric power required for the work can be supplied by the department from the nearest existing line of the Port Trust at prevailing rates. The cost of drawing temporary lines/ cables/ providing switches and making connection and metering

arrangements etc, shall be borne by the Contractor. If there is any disruption in the power supply due to supply failure/ restrictions imposed by the Kerala State Electricity Board, the department shall not be held responsible and the Contractor has to make suitable alternative arrangements at their cost.

7. Contractor's responsibility

- 7.1 All materials for use on the works shall be supplied and provided by the contractor at his own cost and shall conform to relevant BIS Specification unless otherwise specified.
- 7.2 Samples of all materials including fixtures, if any, to be incorporated in the work shall be got approved by the Engineer-in-Charge before procurement.
- 7.3 The contractor shall thoroughly study the specifications and drawings and errors/omissions/modifications if any shall be brought to the notice of the Engineer-in-Charge well in advance so that a final decision in the matter could be given in time.
- 7.4 All labour, skilled or unskilled shall be provided by the contractor. Settling any dispute with the labour will be contractor's responsibility.
- 7.5 The contractor shall be solely responsible for any damage or injury to the persons or things caused or suffered during the execution of the work and these shall be made good or compensated at his risk & cost.
- 7.6 The contractor shall take all care and precautionary measures for avoiding any kind of damage/accident in the work site on any account. The department shall not entertain any claim from the contractor whatsoever towards compensation for any damage/accidents at the site due to negligence from his part, during the execution of work.
- 7.7 The contractor shall prior to commencement of the work insure in the joint names of the Employer and the contractor against all loss or damage from whatever cause arising for which he is responsible under the terms of contract.
- 7.8 The work shall be arranged by the contractor without causing any damage to Port's/ any other structures. Any damage caused by the contractor's operation shall be compensated/ made good at contractor's risk and cost to the satisfaction of the Engineer-in-Charge of the works, failing which department will do the rectification work and the cost incurred will be recovered from any sum due to him from the Port.
- 7.9 All plants and equipments and consumables required for the whole work shall be provided by the contractor at his own cost.
- 7.10 The contractor shall not construct any structure, even of temporary nature, for any purpose at site, except with the written permission of the Engineer-in-Charge of the work and any construction so put up shall be removed by the contractor whenever the Engineer-in-Charge calls upon the contractor to do so.
- 7.11 Qualified Engineers with sufficient experience in works of similar nature shall be available at site throughout the contract period during working hours in order to receive instructions from department and to implement them properly and in time.
- 7.12 The contractor shall take all care and precautionary measures for avoiding damage or accidents to the work from ship or other water crafts movements or other operations in the area. The department will not entertain any claim from the contractor whatsoever, towards compensation for any such damage or accident occurring during the execution of the contract.
- 7.13 The contractor shall observe all safety regulations during the execution of the work. Safety measures, precautions, warning signals etc. shall be done at the contractor's cost as directed by the Engineer-in-charge of the work. The contractor

- shall provide all necessary personnel protection equipments such as helmet, lifeguard, goggles, boots etc. to the workmen at his own risk and cost.
- 7.14 The work shall be arranged by the contractor without causing any hindrance to the ship and other water craft operating in the area. No damage shall be caused to the structures in the area, water crafts operating in the area or otherwise by the contractor's operations. Any damage or accident caused by the contractor's operations shall be compensated / made good at the contractor's risk and cost.
- 7.15 The contractor shall supply at his own cost monthly or at intervals as directed by the Engineer-in-charge, well executed photographs in standard size (approximately 24x18 cm) showing the progress of the work and also such other particular item of the work.
- 7.16 No information or photograph concerning the works shall be published without the prior permission of the Chief Mechanical Engineer and drafts of all such proposal/ publication shall be submitted for approval.
- 7.17 The information and data shown in the drawing and detailed elsewhere in the tender document are furnished for general information and guidance only and the Port Trust in no case will be held responsible for the strict accuracy thereof or any deduction, interpretation or conclusion drawn by the tenderer.
- 7.18 The contractor shall observe the conservancy rules relating to the Port and shall always take necessary steps to keep the Port water free of noxious or unhygienic matter due to the work, as are required by the Engineer-in-Charge. Under no circumstances, inflammable materials be allowed to spill into Port area.
- 7.19 The Cochin Port is an International Ship & Port Facility Security (ISPS) code compliant Port and the contractor is obliged to comply with the provisions of the code in force and as amended from time to time. The site for the proposed work is a protected area and hence security rules and regulations including obtaining entry / exit passes including photo passes if any for vehicles, men and materials etc. for entering the area shall be observed by the contractor at his cost.
- 7.20 The contractor shall provide at his own cost **1 (one)** AC Car or equivalent type of vehicle with 4 persons capacity, at his own cost, exclusively for the departmental staff for supervision works, throughout the contract period. The supply shall commence not later than 5 days from the date of commencement of work. The vehicle shall be available round the clock on all days including Sundays and holidays. The vehicle shall have valid registration and insurance. All consumables and stores for the safe working of the vehicle and its drivers as necessary should be provided by the contractor and nothing will be given by the Port for the running of the vehicle under this contract. The contractor shall be solely responsible for the consequences arising out of any loss or damage/accident etc. caused to the vehicle on duty. If the contractor fails to provide vehicle as above, the department will hire the same, the actual cost of which will be deducted from the contractor's bills or an amount of Rs.5,000/- per day/vehicle or part thereof shall be deducted from the contractor's running bills.
- 7.21 The contractor shall provide necessary arrangements as desired by the Engineer-in-Charge for inspection of work without any extra cost from commencement till completion of work.
- 7.22 The Contractor shall ensure that no labourers with criminal background are engaged for the work.
- 7.23 All fossils, coins, articles of value or antiques and structures and other remains or things of geological or archaeological interest discovered in the site of work shall be deemed to be the absolute property of the Port Trust and the contractor shall

- take responsible precautions to prevent his workmen or any other persons from removing or damaging any such article or thing and shall immediately upon discovery thereof and before removal, acquaint the departmental officers of such recovery and carry out at the expense of the department, the Engineer-in-Charge's orders as to the disposal of the same.
- 7.24 The contractor shall remove any plant (floating or otherwise) belonging to him or to any person employed by him which might have sunk in the course of work or otherwise deal with the same as directed by the Engineer-in-Charge and until the same is raised and removed, the contractor shall set on such buoys and display at night such lights for avoiding any mishaps.
- 7.25 **Water required for the construction works including curing work shall be arranged by the contractor on his own cost.**
- 7.26 The contractor shall take all precautions for not to damage any cables/pipes etc. passing through the area of work.
- 7.27 While carrying out hot works such as welding, cutting, chipping the concrete etc. the following conditions shall be strictly observed by the contractor:
- (i) Hot work shall be carried out with the approval of the Dy. Conservator's department and the work shall be done as per the instruction of the fire service personnel.
 - (ii) Welding /gas cutting work shall be carried out only with the prior permission of the Marine Dept. and only when vessel carrying inflammable materials is not berthed at the existing berths near to it.
- 7.28 The contractor shall remove all materials brought to work site / stacked at the work site or anywhere else within the Port area and clear the site at his cost to the full satisfaction of the Engineer-in-Charge before the site is returned to the Port Trust. All such materials including debris, tools & plants etc. shall be disposed off to any place as pointed out by the Engineer-in-Charge or be taken away from the location and shall be cleared in every respect and to reinstate to its original condition at no extra cost to the Port Trust immediately after completion of the work. In case, any such material is found left in the work site or anywhere in the Port area, rent for the storage space occupied by the contractor, either for stacking the materials /debris or for areas used for such purpose but not cleared thereafter, will be recovered as per the prevailing Scale of Rate of Cochin Port Trust, for the rent applicable for open storage space for commercial purpose, for the period for which the area had been occupied by the contractor. In addition to the above, in case the Port requires the area immediately for its use, Port will repossess the land after restoring it to its original condition, material will be confiscated and disposed off at the risk and cost of the contractor, after issuing two notices giving 15 days' time each for removing the material. All expenses incurred on this shall be recovered by disposing off the material if any confiscated. If any balance amount still remains to be realized that will be recovered from the contractor by appropriate means.
- 7.29 **The contractor shall extend all the facilitations and cooperation for other contractors for simultaneous execution of other works in the area entrusted by Cochin Port Trust/ .**
- 7.30 The contractor shall comply with all the provisions of the Indian Workmen's Compensations Act, Provident Fund Regulations, Employees Provident Fund and ESI Act etc. amended from time to time and rules framed there under and other laws affecting the contract labour that may be brought in to force from time to time."

- 7.31 The contractor shall be registered under EPF and ESI Act and the employees employed under them shall be covered in the EPF and ESI scheme. Work Order shall be issued only to the contractors who are registered under EPF organisation and ESI Corporation. The contractors shall regularly remit the employer and employee contribution to the authorities. If not, the Department would remit the same and the amount so remitted shall be deducted from the part/final bill of contractors.
- 7.32 The contractor shall provide, at every work place, at which 20 or more women workers are ordinarily employed, crèches of reasonable size and with adequate facility for the use of their children under at the age of six years at his risk and cost.

8. Workmanship

- 8.1 All the works shall be done strictly according to relevant B.I.S. specifications unless otherwise specified.
- 8.2 The whole work shall be completed in a diligent manner within the contract period and defect or imperfection if any, observed during the defect liability period/ guarantee period, shall be rectified at contractor's cost to the full satisfaction of the Engineer-in-Charge within the time allowed.
- 8.3 **The work shall be arranged in the order of preference as directed by the Engineer-in-Charge of work. In addition to above, contractor shall submit a Quality Assurance Plan (QAP) for the work and it shall be approved by the Engineer-in-Charge before commencing the work and shall be ensured strict compliance of the same. The QAP shall contain the details of tests to be conducted for each material to be used in the work and work.**

9. Temporary works

- 9.1 All scaffolding, staging, bracing and other temporary works required for proper execution of the works, shall be provided by the contractor at his own cost, unless stated otherwise and that should be inclusive of all materials, labour, supervision and other facilities. The layout and details of such temporary works shall have prior approval of the Engineer-in-Charge, but the contractor shall be responsible for proper strength and safety of the same. All temporary works shall be so constructed as not to interfere with any permanent work or with the work of other agencies. If it is necessary to remove any of the temporary works at any time to facilitate execution of works or work by other agencies, such removal and re erection, if required, shall be carried out by the Contractor at the direction of Engineer-in-Charge without any delay and any extra cost on this account shall be borne by the contractor.
- 9.2 On completion of the works, temporary works if any provided by the contractor shall be removed from the site and the area shall be reinstated to the original condition at his own risk and cost.

10. Time For Completion

- 10.1 The time allowed for carrying out the work as mentioned in the Memorandum shall be strictly observed by the contractor. The work shall throughout the time period be proceeded with diligence, time being deemed to be the essence of the contract.
- 10.2 The completion of work may entail working in monsoon period/rainy season without any extra cost. The contractor shall take such an eventuality into consideration while quoting for the work. Normally, no extension of time will be admissible for work in monsoon.

10.3 The whole work shall be completed in the stipulated time, accordance with the provisions under Memorandum included under “Form of Tender” or such extended time as may be allowed under clause 29 of Conditions of Contract included in the GCC.

11. Working time

The normal working time of the Port Trust is from 8 a.m. to 4.00 p.m. on all working days with no interval in between. If the Contractor wishes to carry out the work beyond normal working hours and or on holidays, he should get specific approval from the Engineer-in-Charge for the same. Necessary supervision will be arranged by the department and the expenditure to be incurred in this connection will be borne by the department.

12. Method of Execution

The contractor shall clearly indicate in their tender the method proposed by them for executing the various items of works. During the actual execution of the works if modifications or changes in the method of execution of work is found necessary the contractor shall obtain approval from the Engineer-in-charge of work for such modifications or changes in the method. No claim from the contractor for additional payment shall be entertained by the department on the above account.

The detailed list of equipment/machineries/tools & plants proposed to be mobilized for the deployment in the work as furnished as per **Annexure-7** of Section- I and method of execution furnished under clause above, are considered only for the technical appreciation of the proposal of the contractors and it shall not relieve the contractor of his responsibility of executing the work with the quality specified in the tender and any discrepancy occurs, the construction procedures detailed/specified in the tender will prevail. In case, any additional equipment are required to be mobilised than those listed in the tender for deployment in the work, it shall be arranged and the work executed as per the tender specifications without any extra cost to the Department

13. Alterations and Additions

The Employer shall have power and authority from time to time and at all times to make amendments or additions or alternations or changes in the scope of the work, and specifications, drawings and bill of quantities and give such further instructions and directions as may appear to the Employer necessary and proper for the guidance of the Contractor and the good and efficient execution of the works and the contractor shall receive, obey and be bound by the same according to the true intent and meaning thereof as if the same had been mentioned or referred to in the scope of the work, specifications, Bill of Quantities and Schedules and drawings. The Employer may also vary or alter the lines, levels or positions of any of the works contemplated or may order any of the works contemplated thereby to be omitted, with or without the substitution of any other works in lieu thereof, or may order any work or any portion of works executed or partially executed to be removed, changed or altered, if required, and may order that other work shall be substituted in lieu thereof and any difference in the cost occasioned by any such diminution or alteration so ordered and directed shall be added to or deducted from the Contract Price based on rates available in the contract or where the rates are not specified a suitable rate backed up by rate analysis shall be submitted by the contractor and agreed upon between the contractor and the Employer. In the event of disagreement, the Employer shall fix such rates or prices as shall in their opinion, be reasonable and proper having regard to the circumstances. The contractor shall

give to the Employer before the tenth day of every month, a statement in writing of any extra work which he may have performed during the preceding month, failing which any claim for which he may afterwards make for payment on account of any such extra work will not be allowed.

SECTION III
COCHIN PORT TRUST
No. F2/T-22/HT Supply-IOCL LPG-Puthuvype/2020-M
PROVIDING HT SUPPLY TO M/S. INDIAN OIL CORPORATION LIMITED
FOR THE LPG IMPORT TERMINAL AT PUTHUVYPEEN

2. SPECIAL CONDITIONS OF CONTRACT

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**SECTION III
COCHIN PORT TRUST**

**No. F2/T-22/HT Supply-IOCL LPG-Puthuvype/2020-M
PROVIDING HT SUPPLY TO M/S. INDIAN OIL CORPORATION LIMITED
FOR THE LPG IMPORT TERMINAL AT PUTHUVYPEEN**

(PLEASE NOTE: The IOCL LPG Terminal being a project of National importance, the power supply shall be made available at the terminal on or before 15th June 2021 as per Schedule. The bidders shall ensure that the project is completed as per schedule and no extension will be granted)

2. SPECIAL CONDITIONS OF CONTRACT

1. Special Conditions shall be read in conjunction with the General Conditions of Contract, Specifications, Drawings and any other document forming part of this Contract wherever the context so requires.
Notwithstanding the Sub-division of the documents into these separate section and volume every part of each shall be deemed to be supplementary to and complementary of every other part and shall be read with and into the Contract so far as it may be practicable to do so.
Where any portion of the General Conditions of Contract is repugnant to or at variance with any provision of the Special Conditions, the provisions of the Special Conditions shall be deemed to over-ride the provisions of the General Conditions of Contract and shall to the extent of such repugnancy of variations, prevail.
2. **Measurements of Work Done:**
In addition to the Clause-26 of GCC- 'Computerised Measurement Book', measurement of the work can also be done as detailed below.
 - 2.1 Executive Engineer (hereinafter called the Engineer's Nominee) shall, except as otherwise provided, ascertain and determine by measurement the value in accordance with the Contract of work done.
 - 2.2 All measurement of all items having financial value shall be entered in Measurement Book and/or level field book so that a complete record is obtained of all works performed under the Contract.
 - 2.3 All measurements and levels shall be taken jointly by the Engineer's Nominee or his authorised representative and by the Contractor or his authorised representative from time to time during the progress of the work and such measurements shall be signed and dated by the Engineer's Nominee and the Contractor or their representatives in token of their acceptance. If the Contractor objects to any of the measurements recorded, a note shall be made to that effect with reason and signed by both the parties.
 - 2.4 Department shall not entertain any claim from Contractor for any loss or damages on this account. If the Contractor or his authorised representative does not remain present at the time of such measurements after the Contractor or his authorised representative has been given a notice in writing three (3) days in advance or fails to countersign or to record objection within a week from the date of the measurement, then such measurements recorded in his absence by the Engineer's Nominee or his representative shall be deemed to be accepted by the Contractor.
 - 2.5 The Contractor shall, without extra charge, provide all assistance with every appliance, labour and other things necessary for measurements and recording levels.

- 2.6 Except where any general or detailed description of the work expressly shows to the contrary, measurements shall be taken in accordance with the procedure set forth in the specifications notwithstanding any provision in the relevant Standard Method of measurement or any general or local custom. In the case of items which are not covered by specifications, measurements shall be taken in accordance with the relevant standard method of measurement issued by the Bureau of Indian Standards and if for any item no such standard is available then a mutually agreed method shall be followed.
- 2.7 The Contractor shall give not less than seven days' notice to the Engineer's Nominee or his authorised representative in charge of the work before covering up or otherwise placing beyond the reach of measurement any work in order that the same may be measured and correct dimensions thereof be taken before the same is covered up or placed beyond the reach of measurement and shall not cover up and place beyond reach of measurement any work without consent in writing of the Engineer's Nominee or his authorised representative in charge of the work who shall within the aforesaid period of seven days inspect the work, and if any work shall be covered up or placed beyond the reach of measurements without such notice having been given or the Engineer's Nominee's consent being obtained in writing the same shall be uncovered at the Contractor's expense, or in default thereof no payment or allowance shall be made for such work or the materials with which the same was executed.
- 2.8 Engineer's Nominee or his authorised representative may cause either themselves or through another officer of the department to check the measurements recorded jointly or otherwise as aforesaid and all provisions stipulated herein above shall be applicable to such checking of measurements or levels.
- 2.9 It is also a term of this Contract that recording of measurements of any item of work in the measurement book and/or its payment in the interim, on account or final bill shall not be considered as conclusive evidence as to the sufficiency of any work or material to which it relates nor shall it relieve the Contractor from liabilities from any over measurement or defects noticed till completion of the defects liability period.

3. PHASING OF WORKS

The work has to be carried out in phases as approved by CLIENT from time to time so that the total project work can progress smoothly with least obstruction to the operations and also works of other Contractors/ agencies.

4. STRUCTURAL ALTERATIONS TO BUILDINGS

- 4.1. No structural member in the building shall be damaged/altered, without prior approval from CLIENT.
- 4.2. Structural provisions like openings, pipes if any, provided by CLIENT for the work, shall be used. Where these require modifications, such contingent or works shall be carried out by the contractor, at his cost after the prior approval of CLIENT.
- 4.3. All cut out openings in floors provided by CLIENT shall be closed, after installing the cables/pipes/ducts in accordance with the item therefore in the schedule of work.
- 4.4. All cuttings made by the contractor in connection with the works shall be filled by him at his cost to the original finish.

5. SAMPLES

The Contractor shall require to provide to CLIENT samples of all the materials sufficiently in advance free of cost to obtain approval of CLIENT. Approved samples shall be retained by CLIENT until the completion of the work and all

materials and workmanship incorporated in the work are to conform to the approved samples in all respects. Rejected materials shall be removed from the site immediately under the supervision of CLIENT.

6. SCHEDULE OF QUANTITIES (SOQ)

The quantities given in the tender SOQ are tentative and shall vary as per the site/ CLIENT requirements. Only required items & quantities are to be supplied/ installed. Contractor shall take detailed site measurements, for the items like Supply of HT & LT cables, Earth strips, piping, ducting etc., before placing purchase order / taking procurement action.

Contractor shall monitor the requirements of various items and shall report to CLIENT Engineer in charge with regard to deviations in the existing items and requirement of additional / extra items, if any, for taking necessary action.

7. GENERAL REQUIREMENTS OF COMPONENTS

7.1. Quality of materials

All materials and equipments supplied by the contractor shall be new. They shall be of such design, size and material as to satisfactorily function under the rated conditions of operation and to withstand the environmental conditions at site.

7.2. Inspection of material and Equipments

Materials to be used in the work shall be inspected by the engineer-in-charge. Such inspection will be of the following categories.

- a) Inspection of materials/Equipments to be witnessed at the Manufacturer's premises in accordance with relevant BTS/Agreement Inspection Procedure. The contractor has to give inspection call for each item at least three weeks in advance. The inspection call should include (i) Name of the item (ii) Reference number of schedule of quantity (iii) Details of approval of specification/drawings etc (iv)Address of the suppliers/sub suppliers and (v) Tentative date of inspection. No item/equipment should be supplied without giving inspection call. All arrangements for conducting the inspection and testing at the factory shall be responsibility of the contractor. Inspection / despatch clearance issued by Engineer in charge does not absolve the contractor for the responsibility to meet the tender specification. After the receipt of inspection call for an item from the contractor CLIENT will depute inspectors to suppliers works. In case the offered item is not ready or inspection could not be carried out due to lack of facilities for testing etc. at supplier's works, the inspector will return and the item has to be re-offered for inspection as per its readiness. In this case all the expenses (boarding, lodging, travelling expenses etc.) of the inspector for the second inspection shall have to be borne by the contractor. In case any defect is noticed at a later stage the contractor has to rectify / replace the entire lot to meet specified standards.
- b) To receive materials at site with manufacturer's Test Certificate(s)
- c) To receive materials after physical inspection at site.

7.3. Ratings of components

All current carrying components in an installation shall be of appropriate ratings of voltage, current and frequency as required at the respective sections of the electrical installation in which they are used without their respective ratings being exceeded.

8. RESTRICTIONS IN WORKING HOURS

The number of hours working in the area might be restricted due to operational reasons and contractor will not have any claim for extra payment on this account. The contractor's staff working in the operational area will obey the instructions of authorities in clearing the site. Also prior permission has to be obtained before

stacking of materials in the premises.

The work shall be done in phases, in close co-ordination with civil/electrical/air conditioning false ceiling works and other works as directed by CLIENT.

The contractor shall note that the site for installation will be made available in parts or in phases. It is the responsibility of the contractor to programme his work accordingly. No extra amount will be paid on account of site being made available in phases/parts.

9. LIQUIDATED DAMAGES

For levying LD as per Clause-49 of General Conditions of Contract, the employer is not required to have documentary evidence to quantify or prove the losses suffered by the Employer due to delay in completion of work by the contractor, as per agreement conditions.

10. CONTRACTOR TO SUBMIT PROGRAMME

After the acceptance of his Tender, the Contractor shall, within fifteen days, submit to the Engineer-in-Charge for his approval, a detailed programme taking into account the total time period stipulated in the contract showing the order, the procedure and method in which he proposes to carry out the works.

He shall furnish the particulars in writing of his arrangements of manpower, plant and machinery and all other resources owned and dedicated to this work. Cash flow during the execution of project for procurement of materials and for carrying out of the works including temporary works which the Contractor intends to construct shall also be furnished.

In support of this programme, the Contractor shall submit a work schedule in the form of a CPM/PERT Chart. The Engineer-in-Charge shall if necessary modify the programme submitted by the Contractor and approval shall be given by the Engineer-in-Charge indicating the major milestones. The programme approved by the Engineer-in-Charge shall be final and binding on the Contractor. The approval by the Engineer-in-Charge of such programme, or furnishing of such particulars shall not relieve the Contractor of any of his duties or responsibilities under the contract.

During the progress of work, the Contractor shall be required to furnish the resource mobilisation plan as required by Engineer-in-Charge to keep up the target date of completion.

This CPM/PERT programme will be required to be updated every month or more frequently as directed by the Engineer-in-Charge, based on the actual progress, resource mobilisation and other field conditions actually prevailing.

11. PROGRESS REPORTS AND SCHEDULES

The Contractor shall submit to the Engineer-in-Charge by the third day of every fortnight, six (6) copies of a report in a duly approved format showing the progress made in construction of the works, mobilisation of resources etc. during the previous fortnight.

The Contractor shall also submit by the end of every month his anticipated progress schedule for all items of work for the following month in six (6) copies in an approved proforma to the Engineer-in-Charge.

An order book of work shall be maintained and the Contractor shall acknowledge the orders given by the Engineer-in-charge and shall carry them out accordingly.

The Contractor shall particularly note that the tender rates of the various items shall be inclusive of all incidental charges, such as bailing, shoring, bunding, barricading and lighting, etc. if found necessary during execution and no extra shall be due therefore on any account to the Contractor.

The Contractor should see that the labour and staff employed by him behave in a proper manner and should dispense with services of such person or persons from the site as directed by the Engineer-in-charge.

12. TAXES & DUTIES

- 12.1 All duties, taxes [excluding Goods and Services Tax (GST)] and other levies payable by the bidder/Contractor under the Contract, or for any other cause as applicable on the last date of submission of Bid, shall be included in the rates, prices and the total Bid Price submitted by the Bidder. All investments, operating expenses, incidentals, overheads etc. as may be attendant upon execution and completion of works shall also be included in the rates, prices and total Bid price submitted by the bidder. However, such duties, taxes, levies etc. which is notified after the last date of submission of Bid and/ or any increase over the rate existing on the last date of submission of Bid shall be reimbursed by the company on production of documentary evidence in support of payment actually made to the concerned authorities. Similarly if there is any decrease in such duties, taxes and levies the same shall become recoverable from the contractor. The details of such duties, taxes and other levies along with rates shall be declared by the bidder.
- 12.2 The Contractor shall be solely responsible for all taxes that may be levied on the Contractor or on the earnings of any of his employees or personnel engaged by him and shall hold the Owner/Purchaser indemnified and harmless against any claims that may be against the Owner/Purchaser in this behalf. The Owner/Purchaser does not undertake any responsibility whatsoever regarding taxes under Indian Income Tax Act of the Contractor or his personnel. If it is obligatory under the provision under the Indian Income Tax deduction of Income Tax at source shall be done by the Owner/Purchaser.
- 12.3 Cess as per Building and other Construction Workers Welfare Cess Act (Act 28 of 1996) at the rate of one percent or at the rates prevailing in force at the time of payment of bills, of the cost of construction should be borne by the contractor and the same will be deducted from contractor's bills while making payment or when crediting amount to contractors account.
- 12.4 The item wise rate quoted by bidder shall be inclusive of all taxes, duties & levies but excluding GST. The payment of GST by service availer (i.e. HCSL) to bidder/contractor (if GST payable by bidder/contractor) would be made only on the latter submitting a Bill/invoice in accordance with the provision of relevant GST Act and the rules made thereunder and after online filing of valid return on GST portal. Payment of GST is responsibility of bidder/contractor.
- 12.5 However, in case contractor is GST unregistered bidder/dealer in compliance with GST rules, the bidder/dealer shall not charge any GST on the bill/invoice. In such case, applicable GST will be deposited by CIL/Subsidiary directly to concerned authorities.
- Input tax credit is to be availed by Paying Authority as per rule.
- If the Input Tax Credit (ITC) claimed is disallowed due to failure on the part of supplier / vendor of goods and services in incorporating the tax invoice issued to HCSL in its relevant returns under GST, payment of CGST & SGST or IGST, GST (Compensation to State) shown in tax invoice to the tax authorities, issue of proper tax invoice or any other reason whatsoever, the applicable taxes paid based on such Tax invoice shall be recovered from the current bills or any other dues of the supplier / vendor along with interest, if any.
- 12.6 The rates and prices quoted by the Bidder shall be fixed for the duration of the

contract and shall not be subject to variations on any account except to the extent variations allowed as per the conditions of the contract of the bidding document. The Company reserved the right to deduct / withheld any amount towards taxes, levies etc. and to deal with such amount in terms of the provisions of the Statute or in terms of the direction of any statutory authority and the Company shall only provide with certificate towards such deduction and shall not be responsible for any reason whatsoever.

13. AUTHORIZED PERSONAL

The Contractor shall engage an authorised agent experienced and qualified technical personnel for managing and supervising the work and shall see that all of them are always at the work spot during the working hours, personally checking all items of work. He shall take such orders as may be given to him by the Engineer-in-charge from time to time and shall be responsible to carry them out properly. In case contractor fails to provide an agent as per terms given above, CLIENT reserves the right to deduct a reasonable amount from the contractor's bill, subject to a maximum of Rs.25, 000/- per month, for every month of absence.

14. QUALITY PLAN FOR MANUFACTURE OF EQUIPMENT

The Quality plan for manufacture is a document, which presents in a tabular form, the Quality Control checks to be exercised by the Contractor during the various stages of manufacture and dispatch in order to meet the requirements of this Contract. This plan shall detail the components manufactured, characteristics being controlled and acceptance norms for this characteristic and the agency responsible for performance and witnessing the checks.

After issuance of work order, the contractor shall submit to the Owner, the detailed quality plans to be followed during manufacture of all major equipment's. These quality plans shall be discussed mutually and updated by the Contractor taking into consideration the requirement of the Owner. The quality plan when approved shall form a part of the contract. This document shall be followed for inspection of the concerned equipment.

The details of the quality assurance/ quality checks envisaged by the Contractor during manufacturing of the equipment supplied by him or procured through his subvendors/ sub-contractors shall be detailed out in the quality plans to be submitted by the Contractor. The contractor may also furnish any additional information regarding quality assurance/ quality checks in the additional sheets, if required. Quality plans for major equipment's manufactured by the Contractor or procured through his subvendors/ sub-contractors shall be submitted during engineering. After approval of the Owner is accorded various quality plans shall be bound as a booklet and shall be submitted to the Owner as soon as possible. The contractor shall ensure that the approved quality plans are followed scrupulously by him and by his sub-vendors/ sub-contractors and manufacturing of the items covered under the quality plans shall be taken up only after Owner has approved the quality plan.

15. OPERATION AND MAINTENANCE MANUALS

For all the equipments supplied by the Contractor, he shall submit to the Owner three sets of the O&M manuals in English language plus one soft copy in

CD/USB. The manual shall contain the operational features of the equipment, DOs & DON'Ts, trouble shooting, maintenance schedules for preventive maintenance, detail dimensional drawings, cross sectional drawings, method of disassembly and assembly etc. to make the Owner's staff acquainted with the equipment as well as to enable them to operate and maintain the same in prescribed manner. Manuals shall contain all information for ordering of the spares, like part name, part no., Drawing/ material Specifications, address of the supplier with phone no., email& fax no. etc. Contractor shall ensure that these O&M manuals are made available to the Owner well before starting of initial trials of equipment. Electrical system- power, control and communication drawings shall be submitted. Relevant operation software and application software shall be supplied as part of equipment supply by the contractor. If the contractor includes OEMs items, contractor shall ensure to the extent possible usage of open protocols and all required operator and supervisory passwords etc shall be provided to the owner by the contractor at his cost & risk. All required interfacing cable required shall be supplied along with the equipment.

16. TEST REPORTS OF EQUIPMENTS

On completion of tests of equipment at manufacturer's works, the Contractor shall furnish four copies of test certificates to the Owner for approval and subsequent dispatch clearance. The test report shall invariably indicate identification data, including model no., sl. no. etc. of the equipment, method of application and duration of test along with test results. Only on approval of these test results by the Owner or Owner's representative, dispatch clearance will be issued for dispatch of material to site. Traceability certificate in original of testing equipment shall be submitted to the owner or his representative attending tests and a copy of the same shall be attached with the reports.

17. LIST OF APPROVED MAKES

It will be deemed that the contractor has priced the respective items on the basis of the approved makes. List of approved makes applicable for the contract is placed at respective volumes of technical specification.

- i) Where makes have not been indicated in the approved make list, such items shall be of ISI marked/reputed brands/UL certified. Reputed brand implies a brand which is supported by nationwide sales & service distributors/dealers/network/centers. And all such items shall be got approved from Engineer-In-Charge.
- ii) Wherever "equivalent" mentioned against makes, suitable evidence shall be produced and get the prior approval of such makes from the Engineer-In-Charge.

18. TESTING AND MEASURING EQUIPMENTS

Equipment for measurement of work and testing the installation shall be procured by the Contractor for their use at their own cost. The same shall also be made available to CLIENT without any charges to CLIENT.

19. SITE MAINTENANCE DURING CONSTRUCTION

The Contractors shall time to time clear and remove all rubbish and obstructions from the site and the work area shall be kept clear and unobstructed at all times. Nothing extra shall be paid on this account.

20. CONTRACTOR'S STAFF AND LABOUR

- 20.1. Workers above 60 years of age and below 18 years of age shall not be deployed by the contractor. All labour, skilled or unskilled shall be provided by the contractor. Settling any dispute with the labour, labour union, any Outside union, subcontractor will be contractor's responsibility. Loss of day in this regard should not be claimed for any hindrance at site. The workers engaged for works should have sufficient knowledge and experience in the respective fields. This shall be proved to the Engineer. The Owner may at any time request the contractor to remove from the Work/Site contractor's / subcontractor's supervisor or any other authorized representative including any employee of the Contractor or his Sub-contractor(s) or any person(s) deployed by Contractor for professional incompetence or negligence or for being deployed for work for which he is not suited.
- 20.2. The Owner may at any time object to and require the Contractor/sub-contractor to remove forthwith from the Site a supervisor or any other authorized representative or employee of the Contractor's /sub-contractor(s) or any person(s), if in the opinion of the Owner, the person in question has misconducted himself or his deployment is otherwise considered undesirable by the Owner, the contractor/sub-contractor shall forthwith remove and shall not again deploy the person in question of the Work Site without the written consent of the Owner.
- 20.3. The workmen deployed by the contractor are strictly banned from use of any kind of Narcotics drugs / Alcohol / smoking etc. at site and any illegal activity by the work men should be reported to Engineer without delay and the contractor shall remove such persons from the work site forthwith.

21. STATUTORY APPROVALS

The scope of work also includes obtaining Initial and final approval/ NOC for the system from State Fire Department/concerned departments /local bodies/ other statutory bodies and liaison works with the department. All incidental expenses in this regard shall be borne by the contractor however the statutory fees paid to the authorities will be reimbursed at actual on submission of documentation evidence.

- a) All the equipment to be supplied and works to be executed should conform to the Electrical Inspectorate/CEA Standards including all protection and metering accessories.
- b) Contractor has to obtain necessary scheme approval (NOC) for various facilities, if any, from the Electrical Inspectorate/CEA immediately after the award of work. Electrical works are included in different packages. However the scheme approval and final approval from KSEI shall be obtained by the electrical contractor having A Grade license issued by KSEI.
- c) All testing/calibration, etc. are to be carried out as per the requirements of statutory authorities. The tests/calibration certificates shall be submitted to CLIENT
- d) On completion of work, the contractor has to obtain necessary safety / energisation certificate from Electrical Inspectorate / CEA by submitting necessary completion certificates, drawings, equipment details, load details, test results, etc. before energisation.

- e) All costs incurred in obtaining such approval/certificates are to be borne by the contractor. Statutory fees paid shall be reimbursed on presentation of documents.
- f) If the current rating of any of the switchgears including circuit breakers mentioned in the Schedule of requirements is not available or is not in conformation to the Inspectorate standards then it shall be rated to the nearest higher rating available with the current rating/fuse rating as specified.
- g) Obtaining approval from authorities like Navy, Railway, National Highway, Corporation, Traffic Police, PTCC etc. for laying of cables along side roads, railway lines, crossing of roads/railway line etc. before commencement of work, shall be the sole responsibility of the contractor.
- h) The Electrical works shall be carried out as per Central/State Electrical Inspectorate standards/specifications /guidelines and the contractor shall get the approval and safety certificate from the inspectorate after the completion of work and before energisation.
- i) The Contractor shall comply with proper and legal orders and directions of local or public authority or municipality and abide by their rules and regulations and pay all fees and incidental charges which may be liable during the contract period.

22. PERFORMANCE TESTING

22.1. At Manufacturers works

Before dispatching the equipment to site, the equipment will be inspected at the discretion of the CLIENT and tested for various parameters as detailed in the Technical Specifications, by the officials of CLIENT/Consultants at the manufacturer's works and then cleared for shipment. The tenderer shall give adequate notice to enable CLIENT to plan their visit for such tests/inspection. The inspection conducted will however, not in any way absolve the contractor of his responsibility for the continued performance of the system/components after erection & commissioning at the designated site during the period of defects liability.

22.2. At site

- (a) On-site testing shall be conducted to ensure that the machine performance continue to be with the contracted performance parameters for which contractor shall make necessary provisions during installation which will enable testing of the machines.
- (b) All the required equipments and measuring instruments for carrying out the testing has to be arranged by the contractor. The instruments used shall be calibrated to test and the valid certificate of calibration should be submitted to the CLIENT's Engineer in charge.

23. COMMISSIONING AND HANDING OVER OF EQUIPMENTS

23.1. DEFECTIVE WORKS

If the works or any portion thereof shall be damaged in any way excepting by the acts of the Purchaser, or if defects not readily detected by prior inspection shall develop before the final completion and acceptance of the whole work, the Contractor shall forthwith make good, without compensation, such damage or defects in a manner satisfactory to the Purchaser/Engineer. In no case shall defective or imperfect work be retained.

23.2. INITIAL TRIAL

On completion of works, erection of equipment, each item of the work / equipment as applicable shall be thoroughly cleaned and inspected jointly by the Owner / Consultant and Contractor for correctness and completeness of installation and acceptability for initial trials of the equipment by the Contractor & Owner. During the above joint walk down, the list of equipment deficiency & defects shall be prepared and for such a punch list, action shall be initiated by the Contractor in agreed time frame. The list of tests to be performed prior to initial trials shall be mutually agreed and included in the Field Quality Plan by Contractor. Prior to starting of initial trials all site tests, calibrations and parameter settings as indicated in the technical specification shall be carried out. The purpose of these trials is to ensure integrity of each individual equipment for its operation in the system for initial operation.

23.3. INITIAL OPERATION

After successful completion of works, initial trials of all the individual equipment, all equipment's shall be operated together as a system. The purpose of this initial operation is to ensure integrity of all the sub-systems which compose the total system. Based on the observations made during initial operation, necessary corrections shall be effected in the equipment / systems to ensure proper integrated operation of the system. After satisfactory completion of initial operation for each equipment & sub-system, the complete equipment shall be considered ready for trial operation/performance guarantee testing. The Contractor has also to ensure that he trains Owner's Engineers at site dealing with this system in proper way. During commissioning of major equipment, contractor has to ensure the presence of commissioning Engineers of OEMs wherever required.

24. TRIAL OPERATION / PERFORMANCE GUARANTEE TEST

The method of trial operation, duration and loading conditions shall be discussed with the Engineer and a plan shall be prepared. During the period of trial operation, all the necessary adjustments in the plant/ equipments shall be made by the Contractor to establish that the complete system as a whole with all subsystems and with all standby equipment is ready for continuous operation. During these trials, all the standby equipments also shall be run alternatively and continuously to prove their performance. A trial operation report comprising of dates and duration of trial, observations and recordings of various parameters to be measured shall be prepared by the Contractor and signed jointly by the Engineer and the Contractor. If the trial operation is not satisfactory, then based on the observations during trial operation, necessary modification/repairs to the plant/ equipment shall be carried out by the Contractor and on completion of such works, the trial operation shall be repeated again as per the relevant procedures.

25. FINAL ACCEPTANCE:

Final acceptance of the equipment/system is after obtaining statutory approvals from all statutory authorities as applicable as per Clause 22 of SCC.

26. HANDING OVER / CERTIFIED DATE OF COMPLETION

Up on the satisfactory commissioning of the entire system, the system shall be observed for 15 days. After this satisfactory trial period, the work shall be handed over officially and completion date recorded by Engineer-in-charge with all the prescribed formalities for handing over.

This date shall be reckoned, as the certified date of completion and the defects liability period shall commence from this date.

Until the handing over of the installation, the responsibility lies with the contractor for safety, upkeep etc.

26.1. COMPLETION CERTIFICATE

For all works completion certificate shall be submitted to CLIENT, after completion of work.

It is the responsibility of the contractor to provide and make arrangement of all spares including consumables for carrying out periodical/preventive maintenance during warranty / defect liability period without any cost to CLIENT. However, the tenderer should furnish a list of spares, they plan to make available at site, to take care of warranty period. These spares shall be supplied along with the equipment. In case, any spares are required other than the listed spares, contractor will provide the same without any cost to CLIENT including customs duty.

27. PAYMENT TERMS

27.1. Bills shall be prepared and submitted by the Contractor. Joint measurements shall be taken continuously and need not be connected with billing stage. System of 4 copies of measurements, one each for Contractor, Employer and Engineer or his nominee, and signed by both Contractor and Engineer or his nominee shall be followed.

27.2. Payment for Electrical and Mechanical works shall be regulated as detailed below:

27.2.1. The Contractor shall be entitled upon certificates of the Engineer or his nominee to payments in accordance with the following provisions:

a) **For supply portion :** 75% of the value, as certified by the Engineer or his nominee, of the materials from time to time delivered on the site.

Balance 25% after completing the work in all respects, commissioning and handing over the installation to the Employer to the satisfaction of the Engineer and his nominee and his certification.

b) **For erection portion :**

i) 85% of the value as certified by the Engineer or his nominee, of the installation portion on completion of the erection work under contract, for which payments are claimed.

ii) Balance 15% along with other payments if any, after completing the work in all respects, commissioning and taking over the installation by the Employer to the satisfaction of the Engineer and his nominee and his certification.

27.2.2. For HT works, the work shall not be considered as completed until the installation is energized after obtaining approval certificate from Central Electrical Authority(CEA) and upon the issuance of taking over certificate by Engineer or his nominee. The final payment shall be made only after taking over the installation by the Employer.

27.2.3. Running Bills shall be paid as per contract condition within 21 days of date of submission of bills in full shape by the Contractor on the jointly agreed quantities. However 50 % of the bill amount shall be paid within 10 days of submission of the bill, if on request by the Contractor. Balance amount of the verified bill shall be paid within 21 days of the submission of the bill.

27.2.4. For final bill: The Final Bill shall be paid within 2 months on submission of CEA approval for energizing the installation if required, commissioning and taking over the installation. The Contractor shall submit final Bill within 10 days of issue of Taking over Certificate. Engineer or his nominee shall check the bill within 20 days after its receipt and return the bill to Contractor for corrections, if any. The Contractor should re-submit the bill with corrections within 15 days of its return by the Engineer or his nominee. The re-submitted bill shall be checked and paid within 15 days of its receipt.

- 27.3. All the interim payments shall be regarded as payment by way of advances against final payment only and shall not preclude the requiring of bad, unsound and imperfect or unskilled work to be rejected, removed, taken away and reconstructed or re-erected. Any certificate given by the Engineer or his nominee relating to the work done or materials delivered forming part of such payment, may be modified or corrected by any subsequent such certificate(s) or by the final certificate and shall not by itself be conclusive evidence that any work or materials to which it relates is/are in accordance with the contract and specifications. Any such interim payment, or any part thereof shall not in any respect conclude, determine or affect in any way powers of the Engineer- or his nominee-charge under the contract or any of such payments be treated as final settlement and adjustment of accounts or in any way vary or affect the contract.
- 27.4. Pending consideration of extension of date of completion interim payments shall continue to be made as herein provided, without prejudice to the right of the department to take action under the terms of this contract for delay in the completion of work, if the extension of date of completion is not granted by the competent authority.
- 27.5. No further claims shall be made by the Contractor after submission of the final bill and these shall be deemed to have been waived and extinguished.
- 27.6. If an amount certified is increased in a later certificate as a result of an award by the Arbitrator, the Contractor shall be paid interest upon the delayed payment as set out in the award. Interest shall be calculated from the date upon which the increased amount would have been certified in the absence of dispute.
- 27.7. Items of the Works for which no rate or price has been entered in will not be paid for by the Employer and shall be deemed covered by other rates and prices in the Contract.
- 27.8. All payments to the Contractor under the contract shall unless otherwise stated elsewhere be made to the Contractor in Indian currency through e- payments through designated Bank.

28. MEASUREMENTS

The quantities set out in the Schedule of quantities (Price Bid) are the estimated quantities of the work, but they are not to be taken as the actual and exact quantities of the Work to be executed by the Contractor in fulfillment of his obligations under the Contract. The payment shall be made for actual measured quantity both for supply and installation. In this case the quantity shall be taken after installation, i.e. only installed portion of the work after completing the work would be measured. Scrap and balance materials would not be measured and hence no payment would be made for the same. It may be noted that payment against the supply of items, in any case shall not exceed the final measured quantity. However Electrical works related to mechanical works is treated as a package and the amount is on lump sum basis for the successful completion of the work. Additional payment, if any released during the supply of items more than the final measured quantity, corresponding payment shall be adjusted later, while processing subsequent bills after the final measurement.

29. PARTIAL TAKING OVER

CLIENT reserves the right to take over a portion of the work which is completed in all respects before the handing over of the entire work if the remaining portion of the work is getting delayed. The operation of such completed works taken over by CLIENT, during the defect liability period, shall be under the scope of the contractor.

30. ACCOMMODATION/SITE OFFICE

CLIENT will not provide any quarters for the accommodation of contractor's personnel. The contractor shall make his own arrangements at his cost for accommodation/medical aid/treatment for staff and workers engaged by him on this project, and the contractor should ensure water supply, sanitation, access roads, electrification and general cleanliness of his camps, as required by labour laws in force. All arrangements regarding sanitation, water supply, electric supply and cleanliness shall be tidy and workman like and shall be got approved by the Engineer-in-Charge prior to the construction of the camps.

Warehouse, shed, shop and office facilities as required by the contractor shall be provided by him at his own expense, and shall be approved by the CLIENT. After the work is over, all these temporary facilities shall be removed by the contractor at his own expense to the satisfaction of Engineer-in-Charge/CLIENT within 30 days from the date of completion of work.

31. WATER AND ELECTRIC SUPPLY

Electric power required for the work can be supplied by the department from the nearest existing line of the Port Trust at prevailing rates as per the prevailing term and conditions of Cochin Port which may be amended time to time. If electric power is supplied by the department, the Contractor shall make payment of monthly electricity bills. The cost of drawing temporary lines/ cables/ providing switches and making connection and metering arrangements etc, shall be borne by the Contractor. If there is any disruption in the power supply due to supply failure/ restrictions imposed by the Kerala State Electricity Board, the department shall not be held responsible and the Contractor has to make suitable alternative arrangements at their cost.

The CLIENT will not be responsible for the supply of water to the Contractor.

32. PRICES

The rate quoted for all items (Imported and Indigenous) shall be in Indian Rupees only. Price shall be Inclusive of all taxes & duties, labour, tools & plants, packing, freight/ transportation & insurance up to the site, loading, unloading, fee (s) for testing, inspection, documents etc. excluding GST .

Fee(s) payable for obtaining statutory license/approval etc from concerned department shall be reimbursed by CLIENT on actual basis on production of original receipt from concerned department.

CLIENT does not give any concessional forms/ certificates/ permits towards any taxes, duties & other levies likeroad taxes/ permits, etc.

All items shall be fully insured by the contractor. **The cost of Insurance and Freight & handling charges shall be paid by the contractor. The documents in support of insurance policy shall be submitted to CLIENT as well as the supplier before shipment.**

The contractor shall send the goods to consignee i.e., CLIENT in a fully packed condition as per requirement of component/equipment and fully insured.

The contractor shall be solely responsible to ensure the following:

- a. Sound packing of equipment / components.
- b. Shipment of the items by the due date as per schedule.
- c. Insurance.

- d. Forwarding and transshipment of equipment/components up to the destination.
- e. Insurance of Inland transshipment.
- f. Receipt of equipment at site and safe custody till they are installed, tested and commissioned & taken over by CLIENT.
- g. Execution, installation, testing and commissioning of the installation as specified in the tender.
- h. Handing over of installation to the authorized representative of CLIENT.

33. GUARANTEE / WARRANTY

All the items of equipment and installations shall be guaranteed to be free from defective workmanship or materials for a period of 1 year from the date of handing over. The Contractor at his own cost shall rectify any defect /replace material that may appear during the period.

During this period, the contractor shall without any extra cost, carry out all routine and special maintenance of the works executed by him and attend to any difficulties and defects that may arise in the day to day operation of the system within 24 hrs. Of complaint reported by CLIENT.

The Contractor shall guarantee that all material, machinery, Consumables and components, supplied, fabricated, designed and installed by him shall be free from defects due to faulty material and/or workmanship and that the system shall perform satisfactorily, and the efficiency of the system and all the components shall not be less than the values laid down in the specifications and the capacities shall be at least equal to those specified. During the guarantee period any or all components found to be defective shall be replaced or repaired free of charge and shortcoming found in the system as specified shall be removed at no extra cost. The Contractor shall provide the necessary personnel and tools for fulfilling the guarantee. If the defects are not remedied within a reasonable time, CLIENT may proceed to get the defects remedied at the Contractor's risk & expenses without prejudices to his right. The Contractor shall without any cost to the Employer carry out during the guarantee period all routine and special maintenance of the system and attend to any defects that may arise in the operation of the system.

The Contractor shall hold himself fully responsible for reinstallation or replace free of cost to CLIENT during the defect liability period as stipulated hereunder.

- a) Any defective material supplied by the Contractor or defective workmanship of the Contractor.
- b) Any material supplied by CLIENT which is proved to be damaged or destroyed as a result of defective workmanship by the Contractor.

34. ARRANGEMENT OF MATERIALS

All the materials required for this work should conform to relevant BIS Specifications unless otherwise specified. The copies of Purchase Vouchers & Gate Passes should be produced along with the materials. The test certificates, Routine test certificates and acceptance test certificates are also to be submitted.

35. STORAGE OF MATERIALS

The storage and custody of materials brought to site is the full responsibility of the contractor. Necessary store rooms if necessary should be constructed by the contractor. The land required for stores will be provided by the CLIENT free of cost. The store should have double lock arrangement with one key with the CLIENT Engineer-in-charge and the other with the Contractor. **All materials supplied by the contractor should be covered under storage insurance.**

36. PROCUREMENT OF MATERIALS

Contractor shall make his own arrangements for the timely procurement of all materials required for the work. Status of procurement of every item required for the project is to be submitted every week. In case materials are not supplied in time, Engineer in charge will arrange for procurement directly from the supplier and the expenses incurred will be deducted from the contractor's bill. Immediately on award of contract, the contractor has to submit the list of makes of item, which he is planning to procure for the project and approval has to be obtained from the engineer in charge. After the make approval, detailed specification/drawings/ test reports etc of every item has to be submitted.

37. BYE-LAWS

- a) The contractor shall comply with all bye-laws and regulations of local and statutory authorities having jurisdiction over the works and shall be responsible for obtaining prior approval, if any, and payment of all fees and other charges, giving and receiving of all necessary notices and keeping the Engineer-in-Charge informed of the said compliance with the bye-laws, payments made, notices issued and received.

The Contractor shall indemnify CLIENT against all claims in respect of royalties, patent rights, design trademarks of name or other protected rights in respect of any plant, machine, work or materials used for or in connection with the work or temporary works and from and against all claims, demands proceedings, costs, charges and expenses whatsoever in respect of or in relation thereto. The Contractor shall defend all actions arising from such claims and shall himself pay all royalties, licence fees, damages, costs and charges of all and every sort that may be legally incurred in respect thereof.

- b) The Electrical works shall be carried out as per the local electrical inspectorate standards/specifications/guide lines and the contractor shall get the approval and safety certificate from the inspectorate after the completion of work and before energisation.
- c) The Contractor shall comply with proper and legal orders and directions of the local or public authority or municipality and abide by their rules and regulations and pay all fees and charges which he may be liable.
- d) The contractor should liaise with local authorities to ascertain the underground cables, pipes, ducts etc., if any, in the areas of construction site and furnish to the Engineer-in-Charge the information and precautions that are being taken to avoid damages.
- e) The work shall be carried out without infringing on any of the local Municipal Bye-Laws.

38. SUBCONTRACTS

The Contractor shall be fully responsible to CLIENT for the acts and omissions of his subcontractors and of persons directly or indirectly employed by them, as he is for the acts and omissions of persons employed by him.

Nothing contained in the contractual documents shall create any contractual relation between any subcontractor and the CLIENT.

In case of specialized nature of work requiring very high quality stipulations, such works shall not be subcontracted unless:-

- a) The subcontractor firm has sufficient expertise, equipment/plant back up and experience in the similar nature of work.
- b) The subcontractor firm has sufficient financial background. The firm should have atleast 20% of the value of work to be sublet as net assets.
- c) The subcontractor firm has a track record of completing the works on time and

to the quality stipulations.

- d) The subcontractor firm has not run into litigation/ arbitration in the past three years with the clients.

In no event can any delay or unsatisfactory work conducted by the subcontractor can either be accepted or can be contractor adduce such delay or unsatisfactory work attributable to subletting of work. The main contractor shall be fully responsible for the contract and Management of subcontractors.

39. CONFORMITY TO RULES AND REGULATIONS

39.1.The work shall be carried out in the best workmanlike manner in conformity with this specification, the relevant specification/codes of practice of the Bureau of Indian Standards or IEC recommendations (Except where specified otherwise) and other relevant Indian/International standards with latest amendments, approved drawings and the instructions issued by the Engineer-in-charge or his authorised representative, from time to time. Equipment meeting any other authoritative standard, which ensures an equal or better quality than the above standards, will also be acceptable.

39.2.In addition to the standards, all works shall also conform to the requirements of the followings:

- a) All Electrical works shall be carried out in accordance with the provisions of Indian Electricity Act- 2003, Indian Electricity Rules 1956 amended upto date (Date of call of tender unless specified otherwise)
- b) The works shall also conform to relevant Bureau of Indian Standards' Codes of practice (COP) for the type of work involved.
- c) Materials to be used in work shall be ISI marked/UL certified wherever applicable.
- d) In all electrical installation works, relevant Safety codes of practices shall be followed.
- e) Fire Insurance Regulations.
- f) Regulations laid down by the Chief Electrical Inspector of the State Electrical Inspectorate/State Electricity Board/ Central Electrical Authority or any other agencies concerned.
- g) Regulations laid down by Fire & Rescue Services and National Building Code.
- h) Any other regulations laid down by the local authorities.
- i) Installation & operating manuals of original manufacturers of equipment.

40. CONTRACT DOCUMENTS

The Contract document is confidential and must strictly confined to the contractor's own use (except so far as confidential disclosure to sub-contractors or suppliers, if necessary) and to the purpose of the contract.

41. PLAN OF OPERATION AND CO-ORDINATION

For execution of the work under the contract the contractor shall be required to co-ordinate his work with that of other contractors performing works at the site and also in the same areas. So far as practicable all contractors shall have equal rights to use all roads, ground and facilities made available for the joint use of the contractors. The contractor shall permit such works to be carried out without any hindrance and fully co-ordinate his activities with other agencies. No compensation or claim for such contingencies shall be entertained.

42. SAFETY

The contractor shall take necessary precautions to ensure safety of his crew, materials, equipment and the works during the period of the contract. No claim from the contractor for loss of or damage to equipment, materials, crew of the works during the course of the work due to natural causes like cyclones, gales, floods, rains or other cause or combination of causes will be entertained by CLIENT. The contractor shall be fully liable to compensate CLIENT for any loss or damage to works till the time of taking over of the work by CLIENT.

43. ASSISTANCE FOR TAKING MEASUREMENTS

The contractor shall provide necessary labour and assistance to the Engineer-in-charge for checking layout, alignments, levels and other survey works connected with the execution of work and also for taking measurement for finalised works at no extra cost.

44. SCHEDULE OF QUANTITIES AND RATES

The schedule of quantities to be read in conjunction with these Particular Specifications, special conditions, general conditions of contract, specifications, drawings documents forming part of this contract. All corrections in the tender schedule shall be duly attested by the dated initials of the tenderer. Corrections which are not attested may entail the rejection of the tender. The tender document should be signed and returned without detaching any part of the document.

Rates shall include labour, materials, tools, plants, appliances, transport, equipment, taxes, duties, water and power supply, metering and consumption charges, temporary plumbing, cost of cistern sheds for materials, contractor's supervision, overheads, profits, general risks or liabilities and all that is necessary for the satisfactory completion of the job. The rates shall be firm and shall not be subject to exchange variations, labour conditions or any conditions whatsoever other than what is approved in the contract.

45. SITE INVESTIGATION

The contractor acknowledges that he has satisfied himself as to the nature and location of the work, the general and local conditions, particularly those bearing upon transportation, disposal, handling and storage of materials, availability of labour, water, electric power, roads and uncertainties of weather, or similar physical conditions of the site, the conformation and conditions of the ground, the character, the quality and quantities of surface and sub-surface materials to be encountered, including the subsoil water levels, the character of equipment facilities needed preliminary to and during the progress of the work, and all other matters upon which information is reasonably obtainable and which can in any way affect the work or his cost thereof under this contract. Any failure of the contractor to acquaint himself with all the available information concerning these conditions will not relieve him from responsibility for not estimating properly the difficulty or cost of successfully performing the work. Non-familiarity with the site conditions will not be considered a reason either for extra claims or for not carrying out the work in strict conformity with drawings and specifications. The contractor shall note that if any clarifications regarding specifications, conditions of contract, schedule of quantities, scope of work, etc. are required, he should contact the Engineer-in-Charge, CLIENT. No claim on account of ambiguity in any respect will be entertained.

46. DRAINAGE ARRANGEMENTS

The contractor shall control the grading in the vicinity of the buildings and trenches, so that surface water is prevented from running into excavated areas. The contractor shall also be responsible to see that no area around his works becomes flooded during the rainy season because of his piled up material, etc. and subsequently flood other buildings. At the discretion of the Engineer-in-charge the contractor shall take steps to prevent flooding. It shall be the contractor's responsibility to keep areas around his work dry. The cost of repairing flood damage shall be the sole responsibility of the contractor.

47. TESTING AND MEASURING EQUIPMENTS

Equipment for measurement of work and testing the installation shall be procured by the Contractor for their use at their own cost. The same shall also be made available to the Engineer-in-charge without any charges to CLIENT. Equipment for measurement shall be made available at site for use of Engineer-in- Charge and shall be periodically calibrated.

48. SECURITY RULES

The contractor shall follow all Security rules existing in the Port premises and strictly adhered to security norms. The Port security is under CISF and entry to the restricted area will be subject to security checks and other security procedures existing in working Ports. Only selected persons will be permitted to enter to restricted areas under special permission as required for the completion of the project.

The contractor shall also follow at site all Security rules as may be framed by the CLIENT from time to time regarding removal of materials from site, issue of identity cards, control of entry of personnel and all similar matters. The contractor and his personnel shall abide by all security measures imposed by the Managing Director or his duly authorised representative from time to time.

The contractor shall take ultimate care while working in a running port and minimize nuisance to the public. All the work sites shall be separated by providing temporary partitions as directed by Engineer-in-charge. Fencing, partitions, signages shall be provided as per directions of Engineer-in-charge.

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SECTION IV

**SECTION IV
COCHIN PORT TRUST
No. F2/T-22/HT Supply-IOCL LPG-Puthuvype/2020-M
PROVIDING HT SUPPLY TO M/S. INDIAN OIL CORPORATION LIMITED
FOR THE LPG IMPORT TERMINAL AT PUTHUVYPEEN”**

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SECTION IV
COCHIN PORT TRUST
No. F2/T-22/HT Supply-IOCL LPG-Puthuvype/2020-M
PROVIDING HT SUPPLY TO M/S. INDIAN OIL CORPORATION LIMITED
FOR THE LPG IMPORT TERMINAL AT PUTHUVYPEEN

(PLEASE NOTE: The IOCL LPG Terminal being a project of National importance, the power supply shall be made available at the terminal on or before 15th June 2021 as per Schedule. The bidders shall ensure that the project is completed as per schedule and no extension will be granted)

TECHNICAL SPECIFICATION

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SCOPE OF WORK

The subject work is for “Providing HT supply to M/s.IOCL for the LPG storage terminal at Puthuvypeen”. The brief scope of work is as shown below.

- i) Supply, laying, testing and commissioning of approximately 3.3 KM of 3C x 300 sq.mm, 11KV FRLHS XLPE cable from the RMU at the entrance of road towards MULT in the Puthuvypin main Road to the IOCL LPG storage terminal near to Light House by open trench/HDD/through underground pipe.
- ii) Supply, installation, testing and commissioning of 5 Nos. 11 KV SF6 single DO Switch Unit along the cable route at different locations for looping and terminating the HT cables.
- iii) Supply, installation, testing and commissioning of 2 Nos. 11 KV SF6 LBS RMU Unit for tapping the HT supply.
- iv) Installation and commissioning of one number Commercial Metering Unit panel inside the IOCL storage terminal premises.
- v) Supply and providing end termination kit for HT cables.
- vi) Earthing the entire installation.

I. GENERAL TECHNICAL SPECIFICATIONS OF ELECTRICAL WORKS

1. GENERAL TECHNICAL PARTICULARS.

1.1 General specification

Fault level at 11 KV	: 25 KA
Anticipated Max. fault level	: 50 KA
Rated system voltage	: 11 KV
Rated frequency	: 50 Hz
Neutral earthing	: effectively earthed.
Installation of cable	: Underground burial.
Rated short circuit current at 11 KV side	: 25 KA
Proximity of extraneous heat source	: Nil
Max. Permissible operating temp. of conductor under normal Operation	: 90 ⁰ C
Under short circuit	: 250 ⁰ C
Ground temperature	: 40 ⁰ C
Type of installation	: Earthed
Maximum temperature of air	: 45 degree C
Minimum temperature of air	: 22 degree C

Maximum relative humidity	: 95%
Minimum relative humidity	: 10%
Average No. Of thunderstorm days	: 40 days
Average number of rainy days per annum	: 90 days

1.2 Type of soil along the cable route

General condition of the earth is soft marshy. Some portions are tarred with rubble soling. However Contractor shall conduct route survey before submitting their quotes.

1.3 General conditions

In addition to the above, the scope intends to cover but not restrict to the following activities, services and works.

1. Complete design and engineering of all the systems, sub-systems, equipment, material and services.
2. Providing engineering data, drawing and O&M manuals for Employer's review, approval and records.
3. Supply, testing, packing transportation and insurance the equipments from the manufacturer's work to the site.
4. Receipt, storage, insurance, preservation and conservation of equipment at the site.
5. Fabrication, pre-assembly (if any), erection, testing and putting into satisfactory operation of all the equipment/ material including statutory clearances & successful commissioning.
6. In addition to the requirements indicated in Technical Specifications, all the requirements as stated in relevant regulations stipulated for successful commissioning of the installation also be considered as a part of this specification and Contractor is bound for compliance the same.
7. The Contractor shall be responsible for providing all material, equipment and services specified or otherwise which are required to fulfill the intent of ensuring operability, maintainability and the reliability of the complete work covered under this specification.
8. For individual equipment specifications reference shall be made to the relevant Technical Specification of the equipment as per contract condition
9. The Contractor shall be responsible for the overall management and supervision of works. He shall provide experienced, skilled, knowledgeable and competent personnel for all phases of the project, so as to provide the Employer with a high quality system.
10. A project execution schedule called Master Network (MNW) in the form of PERT /Gant chart/ network and based on 'Work break down structure' shall be prepared by the Contractor for Employer's approval. The MNW shall identify milestones of key events for each work/ component in the areas of engineering, procurement, manufacture, dispatch, erection & commissioning.

II. PROJECT MANAGEMENT & SITE SUPERVISION

1. Testing and commissioning

The scope includes testing and commissioning of all equipment, sub-systems and systems of the project and putting them into successful commercial operation. The scope shall include but not limited to the requirements given elsewhere in the specification. The Contractor shall be responsible to provide all necessary testing and commissioning personal, tools and plant, test equipment etc. The Contractor shall identify all interface issues with Employer and other agencies, and shall be responsible for each interfacing, coordination and exchange of all necessary information.

The Contractor shall submit to the Employer all drawings for review. He shall list out the detailed requirements of interface between Contractor's work and the material and services to be supplied by Employer.

The interpretation of the Employer in respect of the scope, details and services to be performed by the Contractor shall be binding, unless specifically clarified otherwise by the Employer in writing before the award of the contract.

The drawings (enclosed), forming a part of the specification shall supplement the requirements specified herein. These are preliminary/ tentative drawings for bidding purpose only and are subject to changes that may be necessary during detailed engineering after award keeping the basic parameters as specified.

Failure of any equipment to meet the specified requirements of tests carried out at works or at site shall be sufficient cause for rejection of the equipment. Rejection of any equipment will not be held as a valid reason for delay in the completion of the works as per schedule. Contractor shall be responsible for removing all deficiencies and supplying the equipment that meet the requirement after furnishing of necessary fresh type test report, as per relevant ISS Standard from NABL Accredited Laboratory.

2. Compliance Of Electricity Act, Regulations, Etc.

Contractor is required to follow statutory regulations stipulated in Electricity Act 2003, Indian telegraph act 1889, Electricity (Supply) Act 1948, Indian Electricity Rules 1956, CEA (Regulation relating to safety of electrical installation) regulation 2010, with all amendments till date and other local rules and regulation referred in this specifications.

The Contractor shall comply with all the statutory rules and regulations prevailing in the state of Kerala including those related to safety of equipment and human beings.

The successful Contractor (individual) or any of the partner of joint venture who has qualified, should obtain "A" class electrical license from Electrical inspectorate of Govt. of Kerala/GoI/ any other state/ Union territory etc. before award of contract and to be kept valid till such time all the erected work as per scope of the award is taken over by the Employer.

The Contractor shall do complete coordination with all local and statutory agencies for execution of complete works including obtaining clearance for energizing of the HT system upon completion of entire works. The Contractor shall obtain approvals & clearances and right of way from all agencies involved. All cable routes shall

generally be routed through public land/ along the road. Necessary statutory fees if any shall be paid by the User/ Cochin Port.

The Contractor shall be responsible for transportation to site all the materials to be provided by the Contractor as well as proper storage and preservation of the same at his own cost, till such time the erected installation is taken over by the Employer.

3. Safety Codes and Labour Regulations

In respect of all labour employed directly or indirectly on the work, the tenderer, here in after called the contractor, at his own expense will arrange for the safety provision outlined in safety manual to comply with the statutory regulations, ISI recommendations and other codes.

In case of default, the department shall be at liberty to make arrangements and provide facilities as aforesaid and recover the cost from the contractor.

The contractor shall provide necessary barriers warning signals and other safety measures to avoid accidents. He shall also indemnify CoPT against claims for compensation arising out of negligence in this respect.

Nothing in these specifications shall be construed to relieve the contractor of his responsibility for the design, manufacture and installation of the equipment with all accessories in accordance with applicable statutory regulations and safety codes in force from the safety angle.

4. Works To Be Done By The Contractor

In addition to supply, installation, testing and commissioning of all equipments as per schedule of work, the following work shall be deemed to be included within the scope of work, to be executed by the contractor.

- (i) All minor building works, such as equipments foundation if required cutting and making good holes, grouting of channels belts as required. Cutting and making good damages etc.
- (ii) Provision of supports / clamps for equipments, cables etc. wherever required.
- (iii) Small wiring, inter-connection etc. inclusive of all materials and accessories, necessary to comply with the regulations as well as proper and trouble free operation of the equipment.
- (iv) Closing of the cable entry points in sub-station/ switching stations against seepage of water, rod ends etc.
- (v) Tools and tackles required for handling and installation.
- (vi) Necessary testing equipments for commissioning.
- (vii) Watch and Ward of materials and/or installation and equipments till their handing over to the department

5. Extent Of Works.

The scope of work shall consist of cost of all materials, labour supervision, installation, calibration, adjustments as required for commissioning of the sub-station. The term complete installation shall mean, not only, major item of the plant and the equipments covered by these specifications, but also, incidental sundry components necessary for complete execution and satisfactory performance of installation with all labour charges, whether or not specifically mentioned in the tender documents, which shall be provided by the contractor at no extra cost.

6. Completeness Of Tender.

All fittings, unit assemblies accessories, hardware foundation bolts, terminals blocks for connections, cable glands and miscellaneous materials and accessories of items of work which are useful and necessary for efficient assembly and working of the equipment shall be deemed to have been included within the scope of the work in the tender and within the overall details for complete item whether they have been specifically mentioned or not.

7. Data Manual And Drawings To Be Furnished By The Contractor.

(a) After award of work.

The contractor shall submit the following drawing within a fortnight of the award of the work or as specified in tender document which shall prevail, for approval by the department.

- i. General arrangement or location drawing of the equipment complete with dimensions and clearances.
- ii. General arrangement drawing of H.V. Panel, M.V. panels, Earthing, Cable route etc. including details of grouting of channels / bolts of various equipments.
- iii. All panels' schematics & wiring diagram including control wiring.
- iv. Bar chart indicating general programme for supply, installation, testing and commissioning and handing over.
- v. Any other drawing or data that may be necessary for the job

(b) Before energizing the installation

The contractor shall also furnish 3 copies of detailed installation, operation and maintenance manuals of manufacturers for all items of equipment together with all relevant data sheet, spare parts catalogues, repairs, assembly and adjustment procedure etc., in triplicate.

8. Final Inspection And Testing

When the installation is complete, the contractor shall arrange for inspection and testing of the installation. Test results obtained shall be recorded. The installation shall not be accepted until it complies with the requirement of these Specifications. The installation shall be got inspected by the contractor from local licensee and/or CEA and their clearance taken before energizing the installation. All the observations/ deficiencies pointed out by the inspecting authorities shall be complied with by the contractor on priority. The final payment shall be released only after the installation is accepted by the engineer in charge after it is approved by the CEA and its successful commissioning and taken over.

9. Date Of Acceptance.

The contractor shall operate the installation for a period of at least 3 days after it is energized. The date of taking over of the installation shall be reckoned after its trouble free operation during the running in period. If the installation is not able to operate or to commission due to the reasons beyond the control of the contractor, the taking over date shall be reckoned as date of approval of the installation by CEA. The guarantee period shall commence from the date of approval of CEA and commissioning the installation.

10. Methodology Of Procurement

All equipments/material shall be sourced from reputed manufacturers only. All equipment/ material offered shall be of reputed manufacturers only as per the list of approved make mentioned in the tender document and who have designed, manufactured, completely tested for relevant Indian Standards and supplied the equipment/ material to various State Electricity Boards or other reputed utilities which are in trouble free services at least two different locations for a period of more than two (2) years or as mentioned in the tender as on the date of bid opening.

11. Quality Assurance, Inspection And Tests.

The Contractor shall offer proven and type tested equipment for the project. The type test Certificates shall be complete as per the relevant I.S., carried out by NABL, CPRI or any other statutory bodies responsible for testing of equipment and it shall not be older than 5 years.

If required, Sub-vendor's credentials, copies of valid BIS license, past supply & performance certificates as per requirement will also be required for sub-vender's approval, if not already approved for a specific item.

In case during post award detail engineering stage, if any equipment is found to be not type tested or partially type tested, as per I.S., the Contractor shall carry out complete type test for the items at his own cost.

The Contractor shall arrange all type, routine and acceptance tests at manufacturer's works as per approved Material Quality Programme with CoPT's officer. **Any expenditure in connection with deputing CoPT's representative to the manufacturer's work site will be borne by CoPT.** The Contractor shall arrange the inspection program in consultation with engineer-in-charge to give sufficient advance intimation of the manufacturing and testing schedules to facilitate timely inspection of the equipments by CoPT. Fake inspection call will attract penalty as per the discretion of the employer.

The Contractor shall provide one set of tests reports to Employer on successful completion of the tests.

12. Technical Specification- Supply Of Materials

All materials required to complete the work as per given specifications & drawings etc, must be manufactured and supplied using fresh raw materials. Re-moulded, re-circulated materials are not acceptable. The procurement of materials must be made directly from manufacturer or through authorized dealer/distributors. Documentary evidences to this effect are to be made available to the engineer-in-charge for necessary checks / verification of source of supply of materials. Second hand materials / partial used materials / used materials would not be acceptable

13. Deviation

The offer should be as per Technical Specification without any deviation. But any deviation felt necessary to improve performance, efficiency and utility of equipment must be mentioned in the Deviation Schedule with reasons duly supported by documentary evidences during pre bid meeting. Such deviations suggested may or may not be accepted by the employer. Any deviations projected after the pre bid meeting shall not be entertained at any cost.

14. General Technical Specifications - Supply Of Materials

All materials required to complete the work as per given specifications & drawings etc, must be manufactured and supplied using fresh raw materials. Re-moulded, re-circulated materials are not acceptable. The procurement of materials must be made directly from manufacturer or through authorized dealer / distributors. Documentary evidences to this effect are to be made available to the engineer-in-charge for necessary checks / verification of source of supply of materials. Second hand materials / partial used materials / used materials would not be acceptable. The offer should be as per Technical Specification without any deviation. But any deviation felt necessary to improve performance, efficiency and utility of equipment must be mentioned in the Deviation Schedule with reasons duly supported by documentary evidences during pre bid meeting. Such deviations suggested may or may not be accepted by the employer. Any deviations projected after the pre bid meeting shall not be entertained at any cost.

15. General Technical Specification - Installation Of Equipments

15.1. Scope

This specification covers the engineering requirements for erection/installation, testing and commissioning of equipment/items and its associated works.

15.2. Standards

Erection, testing and commissioning of the equipments covered shall be done as per standard codes of practice and shall comply with requirements of following Indian Standards and other relevant standards, Indian Electricity Rules and acts and also to the regulations that are in force at the place of installation.

- | | | |
|-------------|---|---|
| IS: 1255 | : | Code of practice for installation and maintenance of power cables upto and including 33 kV rating. |
| IS : 5216 | : | Guide for safety procedures and practices in Electrical work. |
| IS :100118 | : | Code of practice for selection, installation and maintenance for Switchgear and control gear-Part-III Installation. |
| IS : 13408 | : | Code of practice for the selection, installation and maintenance of electrical apparatus for use in potentially explosive atmospheres (other than mining application of explosives processing and manufacture). |
| IS: 3043/87 | : | Code of practice for installation and maintenance of earthing of installation. |

15.3. Reference

Following documents shall be read in conjunction with this specification

- (i) Scope of work and special requirements
- (ii) Schedule of items of work
- (iii) Engineering Specification and Data sheet of General requirements of Electrical system.

15.4. General Conditions For Installation Of Equipments

- a) The erection/installation, testing and commissioning shall be carried out in accordance with specification, data sheets, drawings, manufacturer's recommendations, and relevant standards or as directed by owner/Engineer-In-Charge. Requirements regarding erection/installation, testing and commissioning of switchboards, cables, etc, are generally explained here in. It is the responsibility of the contractor to supply all equipment, items, accessories, materials, tools, tackles, transporting, and lifting vehicles, consumables etc. required for unpacking, checking, transportation, storage, safe custody, installation, erection, testing, commissioning, return of unused equipment/items which are supplied from owner's stores and handing over of the installation to the entire satisfaction of owner.
- b) The erection scope shall include supply of all hardwares and accessories such as bolts, nuts, washers, gaskets, cable termination accessories, lugs, paint, primer, sand etc. required for completeness of the work. All consumable materials such as insulation, tape, cleaning and paint brushes, welding electrodes, rust preventive materials, jute, cotton waste, hack saw blades, bolts, nuts, inhibitive grease, fuel, lubricants, etc, and any other material required in carrying out the work but not for incorporation in to the permanent work, shall also be included in the scope of contractor.
- c) The equipment/items to be erected shall be handled with care by experienced workers under the guidance of the competent supervisor. Proper handling and transporting equipments are to be used and dragging is to be avoided.
- d) The equipment/items supplied by the owner, shall normally be kept at their stores. The contractor shall inspect these items at the stores by unpacking the containers, if necessary. Responsibility of safe custody of materials after delivery and till handing over shall rest with the contractor. Unused materials and containers shall be returned to the stores. The items supplied by the owner shall be transported from the point of storage to the point of erection / installation using proper capacity transporting vehicles. The scope shall include unpacking the containers, assembling parts, fixing loose items, components, etc. Materials supplied by the contractor or issued by the owner shall be given suitable protection against weather, dust and vermin. In storage places, equipments shall be placed over wooden sleepers to keep them above ground. Before carrying out erection/installation works of any item, proper care regarding leveling, alignment, access to working parts, facilities for removing the items for repair, statutory clearance, etc. shall be taken.
- e) Foundation bolts, nuts, lock nuts, washers, etc. will normally be supplied by the equipment supplier. Any further requirement of these items shall be under the scope of contractor. The equipment shall be installed on the foundation bolts firmly such that there will not be any vibration during operations. For mounting of equipment/items on the walls/ columns / supports, suitable MS/GI brackets shall be fixed / grouted.
- f) Electrical connections shall be done with great care using spring washers, bimetallic strips, conducting grease, etc. wherever required to ensure good contact without creating undue stresses. Copper bus bar joints shall be made after tinning the contact area. Supply of all required accessories or electrical

connections shall be included in the contractor's scope. Discrepancies if any found between drawings/statutory requirements and actual conditions at the site, shall be immediately brought to the attention of owners representative. If any modification is found required in the writing or to suit site condition the same shall be carried out as per the instruction of the Engineer-In-Charge without any extra cost.

- g) All equipments under erection shall be kept properly cleaned and free of dust, vermin, moisture, etc. After erection, it shall be ensure that non-foreign materials, tools or tackles are left in the equipment. All unused cable entries, cutouts, etc. shall be sealed properly. For hazardous area, blanking plugs suitable for the area classification applicable shall be used.
- h) All tests shall be carried out in the presence of owner's representative and test shall be recorded on an approved proforma duly certified. The records of all tests shall be submitted to the purchaser's representatives. All interconnected wiring shall be checked thoroughly for correct connection with the wiring and schematic drawings of the manufacturer and the drawings supplied by owner before energizing.
- i) All power and bus bar connection shall also be thoroughly inspected and checked for connections, foreign materials, tightness, etc. before energizing the equipment. All components within the main equipment shall be tested for proper performance and correct operation before commissioning the equipment.
- j) All labeling shall be checked for correctness. All nuts, bolts, clamps, joints, connections, etc. shall be checked for tightness and tightened wherever required. All moving parts shall be checked for its correct movement and proper lubrication. Apply lubrication wherever required. All equipment containing liquid shall be checked for correct quantity filling and all gaskets, walls, etc, shall be checked for leak proof. Oil filling, if found required, shall be done with dry and clean oil. Gaskets shall be replaced if found required. It shall be ensured that all CT leads are loaded or shorted prior to testing and commissioning. Insulation tests shall be carried on all electrical devices, whether specifically mentioned or not, as per this work after properly cleaning these devices.
- k) All the relays and its settings after commissioning shall be furnished to owner detailing relay type number, panel number etc. In case of any component of an equipment supplied by the owner is found to faulty/ unsuitable, the same shall be replaced by the new one issued by owner. All relays, before installation, the rating, range and auxiliary supply voltages for the relay should be checked against drawings/ schematic/ schedule.

15.4.1. Civil and structural works

- a) Miscellaneous civil works associated with the erection/installation such as excavation, dewatering and refilling of earth work for earth pits and cable trench, chipping, grouting, small cutting, etc. on floors/ walls/ columns / structures and bringing back the same to original finish, grouting of supports, providing suitable fixing arrangements for cables, push button stations, DBs etc. shall be included in the rates quoted for erection of the respective items, unless specifically excluded in the "Schedule of Items of Work". All

structural works associated with cabling, earthing, equipment erection and supporting arrangements shall be included in the scope of the contractor. All the welding and cutting works shall be carried out by certified welders. Painting shall be done on all MS materials provided, by the contractor such as base channels, frames, supports, pedestals, cable trays/racks/risers, enclosures, boxes, conduits, chequered plates etc. Before painting, the surface should be thoroughly scraped and cleaned to remove dust, grease, plaster or any other foreign materials. It is the responsibility of the contractor to supply and install all the required materials for painting including paint. Cement concrete footing shall be provided for, cable trays/racks/risers, pedestals, supports, etc. Footing shall be provided using 1:2:4 PCC with 20mm broken stone. It is responsibility of the contractor to supply and install all materials such as river sand, reinforcement rods, 20mm broken stone, etc. without any extra cost to owner. All concrete works and grouting shall be cured for a minimum period of 48 hours.

- b) Chipping, grouting, etc as recommended shall be done for completion and installation work on the finished floor, wall, roof, etc. It is the responsibility of the contractor to supply all necessary materials and to bring the disturbed surface to the original finish. Touch painting of scratches found on equipment, other painted metallic surfaces, galvanized etc. associated with this work is also included in the scope of contractor without any extra cost. Base steel structures shall be painted with 2 coats of epoxy primer and 2 coats of epoxy paint.

15.5. Standard requirements for testing and commissioning

- a) The standard requirements for testing and commissioning are furnished below.
- b) All tests shall be carried out in the presence of Owner's representative and tests shall be recorded on an approved format duly certified. The records of all tests shall be submitted to the purchaser's representative.
- c) All interconnected wiring shall be checked thoroughly for correct connections with the wiring and schematic drawings of the manufacturer before energizing. All Power and bus bar connections shall also be thoroughly inspected and checked for correctness, foreign materials, tightness, etc. before energising the equipment.
- d) All components within the main equipment shall be tested for proper performance and correct operation before commissioning the equipment. All labeling and nameplates shall be checked for correctness. All nuts, bolts, clamps, joints, connections, etc shall be checked for tightness and tightened wherever required. All moving parts shall be checked for its correct movement and proper lubrication. Apply lubrication wherever required. All equipment containing liquid shall be checked for correct quantity filling and all gaskets, valves, etc. shall be checked for leak proofness. Oil filling if found required shall be done with dry & clean oil. Gaskets shall be replaced if found required. The condition of oil shall be tested in accordance with IS-335.

III TECHNICAL SPECIFICATION OF 11KV SF6 METAL ENCLOSED, OUTDOOR

(Item Nos. 3 & 4 of BoQ)

i) 3Panel Ring Main Unit (RMU) +CCC+.

ii) Single Panel (+DC+) LBS.

i. SCOPE

This specification covers design, manufacture, shop testing, inspection, packing, delivery to site, erection, testing and commissioning of 11KV Metal Enclosed, panel type, Outdoor SF6 LOAD BREAK SWITCH RING MAIN UNIT (RMU) / DC LBS etc as mentioned above , fully type tested according to IEC 62271-200 standards as required.

The RMU should be complete with all components necessary for its effective and trouble free operation along with associated equipment etc. such components should be deemed to be within the scope of supplier's supply.

The design of the switchgear should be exclusive and specific responsibility of supplier and should comply with current good engineering practice, the relevant codes and recommendation, the project specific requirements.

The RMU should be fixed type SF-6 insulated both side extensible. It should be maintenance free equipment, having stainless steel robotically welded enclosure.

ii. STANDARDS AND REFERENCE DOCUMENTS

The RING MAIN UNIT (RMU) should be designed, manufactured and tested according to the latest version of:

- **IEC 60694** : Common specifications for high-voltage switchgear and control gear standards.
- **IEC 62271-200** : A.C metal-enclosed switchgear and control gear for rated voltages above 1KV and up to and including 72KV and the IEC Codes herein referred.
- **IEC 62271-102**: Alternating current isolators and earthing switches
- **IEC 60529** : Classification of degrees of protection provided by enclosures
- **IEC 60265 High-voltage switches-Part 1**:Switches for rated voltages above 1kV & less than 52 kV
- **IEC 60056**: Circuit breakers
- **IEC 62271-105**: High-voltage alternating current switch-fuse combinations
- **IEC 60185**: Current transformers
- **IEC 60186**: Voltage transformers
- **IEC 60255**: Electrical relays

Any other codes recognized in the country of origin of equipment might be considered provided that they fully comply with IEC standards.

The design of the switchgear should be based on safety to personnel and equipment during operation and maintenance, reliability of service, ease of maintenance, mechanical protection of equipment, interchangeability of equipment and ready addition of future loads. The switchgear shall be painted with marine grade paint.

SPECIFICATION FOR RMU & DC

RMU :11KV SF6 Outdoor, Extensible, Ring Main Unit (RMU), should comprise of **3 nos.** 630A Load Break Switches. RMU LBS shall be configured as 1 No. LBS as incomer and 2 Nos. LBS as outgoing.

DC: 11KV SF6 Outdoor, Extensible, should comprise of **1 nos.** 630A Load Break Switch suitable for giving one incomer and one outgoing for looping the 11 KV cable.

iii. Load break switch (630A)

Load break switch should have the following components

- a. Manually operated 12 KV, 630A Load Break switch and Earthing Switch with making capacity
- b. "Live Cable" LED Indicators through Capacitor Voltage Dividers mounted on the bushings.
- c. Mechanical ON/OFF/EARTH Indication
- d. Operating handle
- e. Cable Testing facility inside cable boxes without disconnecting the Cable terminations
- f. Cable end boxes suitable for 1 run of 3 C x 300 sq mm XLPE Cable with right angle Cable Termination Protectors.
- g. Cable boxes should be Arc Proof and interlocked with respective Earthing Switches. For safety of operator it should not be possible to open the cable box unless the earth Switch is ON.
- h. Switch module with a three position load break switch and earthing switch, bus bars, interlocking and earth bus.
- i. Cable switch 12kV, 630A
- j. Cable bushings 400 series bolted, 630 A, standard
- k. Arc proof cable cover complete incl. Interlocking
- l. Capacitive voltage indication fixed type VPIS 9-15 kV
- m. Aux. switch for load break switch position 2NO + 2NC

iv. Service Conditions

- a. The Ring Main unit shall be suitable for operations in the sea facing area and shall be suitable for marine environment.
- b. The RMU shall be capable of operating normally within the following temperature ranges up to 50°C:
- c. The Compact switchgear shall be capable of being exposed to high relative humidity (max 95%) and ambient air pollution.
- d. The Compact switchgear shall be capable of being operated in electrically exposed

v. Design Parameters: Electrical data

1. Rated voltage	11 KV
2. Rated frequency	50 Hz
3. Rated current busbars	630 A
4. Rated current (cable switch)	630 A
5. Rated current (T-off)	630 A

vi. General data, enclosure and dimensions

1. Standard to which Switchgear complies IEC
2. Type of Ring Main Unit Outdoor, Metal Enclosed, bolted type.
3. Number of phases: : 3
4. Whether facility is provided with pressure relief :Yes
5. Insulating gas : SF6
6. Nominal operating gas pressure : 1.4 bar abs. 20° C

- 7. Gas leakage rate / annum % : 0.1 % per annum or as per IEC 62271
- 8. Expected operating lifetime : 30 years or as per IEC.
- 9. Whether facilities for gas monitoring : Yes, temperature compensated Manometer
- 10. Material used in tank construction : Stainless steel sheet, 2.5/3 mm

vii. No. of Operations, degree of protection and colours

Means of switch operation : Separate handle

Degree of protection:

SF6 tank : IP 67
 Front cover : IP 2X
 Cable cover : IP 3X
 Outdoor Enclosure : IP 54
 Bus bars : 240 mm² Cu
 Earth bar (external): 120 mm² Cu - Bolt dimension: M10
 Thickness of Stainless Steel Tank: 2.5 mm or above.

Colours:

Front cover : RAL 7012
 Side and cable cover : RAL 7035

viii. Technical specification:

SF6 Compact switchgear

Name of switchgear: 11KV +CCC+ (3 nos. LBS (OD))
 (Front Terminated and Cable Entry from Bottom, Incoming through Load break switch and Outgoings through Load break switch

Total number of modules : 3 pieces
 Dimension Approx.: 1170 x 1021 x 2250 mm

ix. STANDARDS AND MECHANICAL DATA

Metal Enclosed switchgear: IEC 60298
 General Purpose switches: IEC 60265
 Disconnectors&Earthing switches : IEC 60129
 Switch Fuse Combination: IEC 60420
 Circuit Breakers: IEC 60056
 Common clauses: IEC 60694
 Pressure of SF6 gas: 1.4 bar at 20 °C
 Cable bushings: DIN 47636
 Temperature class: -25 °C to 40°C Outdoor

x. ELECTRICAL DATA – 12 kV - 28kV-1min

Rated current busbars: 630 A
 Rated current cable switch disconnecter : 630 A
 Short time withstand current (3 sec) cable switch disconnecter : 21 kArms
 Short time withstand current (3 sec) vacuum circuit breaker: 21 kArms
 Rated current for transformer T-off : 630 A
 Impulse withstand voltage :
 To earth and between phases: 75 kV
 Insulation level:
 Power frequency 1 min: 28 kV

xi. General Structural and Mechanical Construction

- a. The offered RMU should be of the fully arc proof metal enclosed, free standing, floor mounting, flush fronted type, consisting of modules assembled into one or more units. Each unit is made of a robotically welded sealed-for life stainless steel tank of thickness not less than 2.5 mm or above, filled with SF₆, containing all high voltage components sealed off from the environment with Ingress protection IP67. The enclosure should meet the ‘**Sealed Pressure System**’ criterion in accordance with IEC 62271-200 standard (i.e a system for which no handling of gas is required throughout the 30 years of service life), so that no refilling of gas is required. In addition, manufacturer shall confirm that maximum leakage rate is lower than 0.1% per year. The overall design of the switchgear should be such that front access only is required. It should be possible to erect the switchboard against a substation wall, with HV and LV cables being terminated and accessible from the front.
- b. The design of the units should be such that no permanent or harmful distortion occurs either when being lifted by eyebolts or when moved into position by rollers.
- c. Sheet metal for outdoor enclosure must be suitably treated and painted with about 70 micron thickness, to achieve outdoor worthiness and corrosion protection and should pass salt spray test for not less than 500 Hours
- d. Enclosure must be suitably ventilated for ambient conditions and shall have IP54 class of protection.
- e. RMU must have a pressure relief device at the bottom of the stainless steel housing to ensure that in the rare case of an internal arc, the high pressure caused by the arc will be released and the hot gases are allowed to be exhausted out at the bottom of the cubicle towards back side to ensure complete safety to the operator. A controlled direction of flow of the hot gas should be achieved.

xii. Load Break Switch (630 Amp cable feeder)

It should consist of an SF₆ cubicle housing a switch disconnecter and an earthing switch. Bus bars and all electrical connections are located inside the tank. The switch positions are closed – open – earthed. The operating shafts for the switches should have rotary seals where they enter the SF₆ cubicle. The operating mechanisms should be located outside on the front of the SF₆ tank. Cable bushings should be located on the front of the SF₆ cubicle in a separate cable compartment. Front covers containing the mimic diagram and having a degree of protection IP2XC close the fronts.

xiii. Earthing of the Main Circuit

- a. Each disconnecter shall be provided with an integral earth switch. Earthing switches should be rated equal to the switchgear rating. Earthing switches should be quick make type capable of making Rated Fault Current. Earthing switch should be operated from the front of the cubicle by means of a removable handle. The earthing switch can be operated only when the main isolator or circuit breaker are open.
- b. Mechanical interlocking systems shall prevent all operator errors such as closing the earth switch when switch is closed.

- c. The HT cables are terminated in the dedicated cable. At the bottom of the cable compartment, an earthing bar system made of copper with a minimum cross section of 200 sq mm (50x4 mm / 40x5 mm) should be fitted. In each compartment the earthing bar should be fitted with 4 screws M10. The earthing system is connected to the tank by a copper bar, which rises up to the connecting point of the tank behind the rear partition wall on the middle of the switchgear.

xiv. Operating Mechanisms

- a. All mechanisms should be situated in the mechanism compartment behind the front covers outside the SF6-tank. The mechanism for the switch and the earthing switch is operating both switches via one common shaft. The mechanisms provide independent manual operation for closing and opening of the switch, independent closing of the earthing switch and dependent opening of the earthing switch.
- b. The mechanism for the T-off switch and earthing switch is operating both switches via one common shaft. The mechanisms has stored spring energy and provide independent manual operation for closing and opening of the switch, independent closing of the ear thing switch and dependent opening of the earthing switch. The mechanism for the disconnecter earthing switch provide independent manual operation for closing and opening of the disconnecter, independent closing of the earthing switch and dependent opening of the earthing switch.
- c. The operating mechanism shall be designed in such a way that in case of failure of operating mechanism the same shall be possible to repair without any gas refilling.

xv. Interlocking

- a. The mechanism for the cable switch should be provided with a built in interlocking system to prevent operation of the switch when the earthing switch is closed, and to prevent operation of the earthing switch when the switch is in the closed position.
- b. Further is should not be possible to Open the Cable doors unless the Earthing Switch is Turned ON. In case the Cable door is accidentally left open a positive interlock shall prevent operation of Load Break Switch and Isolators / Breaker from any operation.

xvi. Bus-bars

The bus bar shall comprise of 3 single phases copper bus bars and the connections to the switch or circuit breaker. The bus bar should be integrated in the cubicle. Bus bars should be rated to withstand all dynamic and thermal stresses for the full length of the switchgear.

xvii. Front Covers

The front cover contains the mimic diagram of the main circuit with the position indicators for the switching devices. The voltage indicators are situated on the front panels. Access to the cable bushings is in the lower part of each module.

xviii. Position Indicators

The position indicators shall be visible through the front cover and must be directly linked to the operating shaft of the switching devices. The operator shall be able to confirm the closing of earth switch. Same can be accomplished either

by providing a viewing window for earth switch or by means of true position indication duly type tested as per IEC 62271-102 sub clause A.6.105 to verify proper functioning of position indicating device.

xix. Voltage Indicators

The Voltage Indicators/Live Line Indicators through capacitor dividers or with VT supported indicators shall be provided on the front cover, one for each module, and indicate the voltage condition of each incoming cable. Identification of the phases is achieved with labels L1, L2 and L3 on the front of the voltage indicators. The voltage indicator with capacitor dividers shall satisfies the requirements of IEC 61243.

xx. Cable Compartment

It should be possible to terminate up to a 1x 3C x300 Sqmm core HV cables in each cable compartment. The cable compartments should be in front and cable entry shall be from bottom. The access to the compartment will be possible by removing the cable cover, hinged to the main frame only when earth switch is ON. Cable Compartments should be Arc Proof and interlocked with respective Earth Switches. Each module has a separate cable compartment that is segregated from each other by means of a partition wall. A partition wall should be fitted to divide the cable compartment from the rear side of the switchgear. In case of an arc inside the tank, followed by the opening of the pressure relief, the partition wall prevents the hot gases flowing out from the pressure relief to enter the cable compartments. All covers are removable. The ground continuity is achieved when the covers are in place by means of hinged connections. It should be possible to perform cable testing inside the cable boxes without disconnecting the cables.

xxi. Padlocking Facilities

The circuit breakers, isolators and the earthing switches can be locked in open or closed position by padlocks 6 to 8 mm in diameter.

xxii. Auxiliaries

The switchgear should be prepared for options like motor operation, auxiliary contacts and short-circuit indicators. Necessary terminal blocks and wiring etc. should be placed behind the front cover of each module.

xxiii. Base Frame

Suitable base frame shall be supplied along with the RMU unit

xxiv. Earthing system.

The equipment shall be supplied with earth bus of 200 Sq mm, tinned copper (50x4 copper or 40x5 copper). The earth bus of the equipment shall also be interconnected to the existing earth pit with same size of strips provided for the equipment. GI strips are also acceptable with sufficient size so as to withstand the fault current of 25 KA for 3 sec. The existing earth strips may also be used for interlinking purpose, however if the existing strip is not sufficient, the additional quantity shall be supplied by the contractor without any extra cost.

xxv. TESTING AND CERTIFICATION

i. Type Tests.

Units should be type tested in accordance with IEC standards 60056, 62271-102, 60265, 62271-200, 62271-105, 60529 and 60694. The following type tests have been performed and available if required

- a. Short time and peak withstand current test
- b. Temperature rise tests
- c. Dielectric tests
- d. Test of apparatus i.e. circuit breaker and earthing switch
- e. Arc fault test
- f. Measurement of resistance of main circuit.
- g. Mechanical endurance test.
- h. Duty cycle test.
- i. Internal arc test for HT chamber.
- j. Degree of protection for IP –54 for Outdoor enclosure.
- k. Tests to verify true position indication devices as per IEC 62271-102.

Type test reports for above tests shall be submitted with the offer.

ii. Routine tests

Routine tests should be carried out in accordance with IEC 62271-200 standards. These tests should ensure the reliability of the unit.

Below listed test should be performed as routine tests before the delivery of units:

- a. Withstand voltage at power frequency
- b. Measurement of the resistance of the main circuit
- c. Partial discharge test for the tank
- d. Withstand voltage on the auxiliary circuits
- e. Operation of functional locks, interlocks, signaling devices and auxiliary devices
- f. Suitability and correct operation of protections, control instruments and electrical
- g. connections of the circuit breaker operating mechanism
- h. Verification of wiring
- i. Visual inspection
- j. Time travel characteristics measurement facility for Breaker should be available with the manufacturer to assess the quality of RMU.

xxvi. DOCUMENTATION

- a. An instruction manual should be provided with necessary information for receiving, handling, storage, installation, operation and maintenance.
- b. Routine test certificate should be follow each unit, and standard schematic drawings should be delivered for Ring Main Units. Compact Switchgear should have drawings that consist of system single line drawings, general arrangement and schematic drawings for order specific units.

- c. All drawings shall confirm to International Standards Organization (ISO) “A” series of drawing sheets/Indian Standards Specification IS : 11065.. All dimensions and data shall be in S.I. Units.

xxvii. List of drawings and Documents

The bidder shall furnish four sets of relevant descriptive and illustrative published Literature, pamphlets and the following drawings for preliminary study along with offer.

- a. General outline drawings showing dimensions and shipping weights, quantity of Insulating media.
- b. Sectional views showing the general constructional features of the circuit breaker
- c. Including operating mechanism, arcing chambers, contacts with lifting dimensions for maintenance.
- d. Drawings showing control cabinets and circuit diagrams for operating mechanism.
- e. Schematic diagrams of breaker offered for control and supervision
- f. □ Structural drawings for support structures.
- g. Foundation plan and loading data and foundation design.
- h. Drawings showing the complete operation cycle of the Ring Main Unit with description.

xxviii. SUPPLY OF CT and PT

The PT and CT contain 1 set of Epoxy Resin type, 11KV/110V, 25VA burden VT unit and 3 Nos. 11KV grade CT of suitable ratio, with burden 10 VA with accuracy class of 0.2S. The CT/PT shall be supplied as per the latest KSERC/KSEB norms and the items shall be tested from meter testing unit of KSEB lab.

a. Scope :

This specification covers the design, manufacture, testing at the manufacturer’s works, supply & delivery at site of combined current & potential transformers of 11KV voltage class as specified for metering services in three phase four wire system..

b. Standard :

The combined current & potential transformers unit and accessories covered by this specification shall comply with the requirement of the latest edition of the following standards unless otherwise stated in this specification. IS:2705 (Part-I-IV) : Specification for current Transformers. IS:3156 : Specification for Potential Transformers. IS:2099 & IS:5621 : Specification for HV Porcelain bushings.

c. Design & Construction of 11 KV Combined Current & Potential Transformers:

The design features and construction details of combined current & potential transformer shall be in accordance with the requirement stipulated in Schedule:

- i. The combined current & potential transformers shall be complete in all respects and shall conform to the modern practice of design and manufacture.
- ii. The combined current & potential transformers shall be of low Reactance outdoor type, three phase, 50 Hz, self cooled with bushing suitable for operation under the service conditions as specified in the general condition of site suitable for outdoor / indoor operation.

- iii. The maximum permissible temperature rise of the combined current & potential transformer winding when carrying a primary current equal to the rated continuous current at rated frequency and with rated burden over an ambient temperature shall not exceed 55 degree C.
- iv. The combined CT & PT Unit shall be complete with all accessories like primary terminal connectors, weather proof terminal box for secondary connection, lifting lugs, grounding terminals and name plate.
- v. The design and construction of combined CT & PT Unit shall be sufficient to withstand the thermal and mechanical stresses resulting from the specified short circuit currents and specified duration as mentioned in General Technical Specification.
- vi. The core of the combined CT & PT Unit shall be high grade non-ageing, electrical, silicon laminated steel of low hysteresis loss and high permeability to ensure high accuracy at both normal and over current.
- vii. The exciting current shall be as low as possible and the combined CT & PT Unit shall be capable of maintaining its rated accuracy at different burdens and within saturation limits.
- viii. Rating plate marking shall be provided as per relevant clause of IS:2705 & 3156.
- ix. The combined CT & PT Unit Characteristics shall be such as to provide satisfactory performance for burdens ranging from at least 25% to 100% of rated burden in case of metering.
- x. The secondary terminals shall be brought out in a weather proof terminal box. The terminal box shall be provided with glands suitable for 4 core 4 Sq. mm & 8 core 4 sq. mm 1.1 KV grade, steel armoured PVC sheathed stranded copper conductor cables.
- xi. The combined CT & PT Unit secondary to be used for metering and instruments shall be of accuracy class and .2 S as specified.
- xii. The saturation factor of this core shall be low enough so as not cause any damage to measuring instruments in the event of maximum short circuit current.
- xiii. Necessary linking cables with CT/PT units and TOD meter including termination kits shall also supplied along with the unit at no extra cost

d. TESTS AT FACTORY AND TEST CERTIFICATES :

Each combined CT/PT shall comply with the requirements of routine test as specified in the relevant Clause of IS:2705: 1992 & IS :3156 . Routine test at manufacturer's works shall be carried out as per relevant IS. All Acceptance tests shall be carried out at the manufacturer's works as per relevant IS. In addition to above, all routine tests are also to be carried out on combined CT & PT Unit as per relevant IS. The instrument transformers and accessories shall conform to the latest version of standards specified except to the extent explicitly modified in the specification.

e. Current transformer/ PT Parameters

- a) Highest system voltage : 12 KV
- b) Rated frequency : 50
- c) Accuracy class : 0.2 S
- d) Output burden : 10 VA
- e) Installation : Indoor
- f) Rated primary current : as per site condition

- g) Rated primary current : as per site condition
- h) One minute dry power frequency withstand voltage : 28 KV (rms)
- i) Max temp rise over ambient temp : as per IS
- j) Type of insulation : class A

Potential Transformer parameters

- a) Accuracy class : 0.2 S
- b) Output burden : 25 VA

III SPECIFICATION FOR THE FOUNDATION , ROOFING & FENCING OF RMU,SINGLE PANEL DC SWITCH ETC.

- a) The details for the roofing, fencing and foundation shall be as given below. The Contractor shall supply all the required materials for the above. The Contractor shall prepare the drawing and get it approved from engineer in charge before the commencement of work. The area of the fencing shall be not less than **2.5 mtr x 1.8 mtr and shall accommodate the RMU unit.**
- b) The contractor shall develop foundation designs for the equipments based on the information furnished by the manufacturers of the same and after assessment of the soil condition in the field and shall prepare the drawings submit the same to the CoPT for approval. Only after approval of these designs and drawings the work should commence.
- c) The location where RMU is to be installed shall be developed by filling soil / earth up to one feet from road level. The foundation shall be RCC. The RMUs shall be placed on the RCC foundations at least 50CM above the surrounding surface to prevent deterioration due to flow of rainwater. Cement concrete used shall conform to IS: 456 shall be of grade approved by engineer in charge. The finishing of the foundation above ground level shall be made with cement mortar and shall have a neat appearance. The concerned Site Engineer shall fix the location of the equipments. The work of casting the foundation at each location shall be commenced only after the approval of the Site Engineer.
- d) The foundation for fixing the RMU panel shall be made of RCC with wall thickness not less than 15 cms and depth of approx.1 M from the base of RMU unit . Width of the foundation trench shall be as per the base size of panel. M20 mix concrete with NYSED grade Fe 415 rods of 12 mm size. shall be used for the construction of concrete foundation of RMU. Sufficient provision shall be provided at sides of the basement for entry of workman inside the trench.
- e) The main flooring inside the fencing shall be RCC of thickness 10 CM with Fe 415 rods of 8 mm size at 20 cms. Interval.
- f) The open portion of trench if any shall be covered with MS sheet not less than 4 mm thickness or FRP sheet.
- g) For fencing foundation 20 CM x 20 CM RCC beam / belt with 8 mm Fe 415 rods shall be constructed throughout the outer periphery of the fencing foundation. Sand filling and PCC shall be provided below the RCC beam throughout the fencing area. Above the RCC work all sides shall be provided with powder coated troughed Aluminum sheet of thickness not less than 0.46 MM with MS

angle supports of size not less than 40 mm x 40 mm x 6 mm up to the roof level . GI ‘B’ class pipe 50 mm dia. at distance of 1 M shall be provided around the fencing .Provision for air passage shall be given.

- h) Suitable door shall be provided in the front side of the fencing with angle supports for the entry of workers with tools. Doors shall be provided with suitable pad locking arrangements. Roofing with powder coated troughed Aluminum sheet of not less than 0.46 mm thickness including bolts, nuts, washer and ridge capping shall be provided. The outer frame of roof shall be 50 mm dia: ‘B’ class GI pipe. Roofing shall cover entire fencing for preventing rain water entering inside the same. The structure shall be painted with two coats of epoxy grey paint over 2 coats of epoxy primer.

IV. 11KV XLPE GRADE CABLE

Scope

This specification provides for manufacture, testing at works before despatch and delivery of **FRLSH , 11 KV grade 3x300 sqmm (E) XLPE Aluminium cable .**

Application

The 11 KV cable is intended for use on Distribution net work, outdoor application for flexibility with connected to RMUs and VCBs for better distribution network.

Codes & standards

All standards, specifications and codes of practice referred to herein shall be the latest editions including all applicable official amendments and revisions as on date of opening of bid. In case of conflict between this specification and those (IS: codes, standards, etc.) referred to herein, the former shall prevail. All the cables shall conform to the requirements of the following standards and codes:

IS: 7089(Part-II)	Specification for Cross linked polyethylene insulated PVC sheathed cable :For working voltages from 3.3 KV upto and including 33 KV
IS:3975	Low Carbon Galvanized steel wires, formed wires & tapes for armouring of cable
IS:4905	Methods for random sampling.
IS:5831	PVC insulation and sheath of electrical cables.
IS:8130	Conductors for insulated electrical cables and flexible cords.
IS:10418	Specification for drums for electric cables.
IS:10810	Methods of tests for cables.
IS:1255	Code of Practice for installation and Maintenance of power cable up to an Edition 3.1including 33 KV Rating.
ASTM-D-2843	Standard test method for density of smoke from the burning or decomposition of plastics.
IEC-754(Part-1)	Tests on gases evolved during combustion of electric cables.
IEC-332	Test on electric cables under fire conditions. Part-3: Tests on bunched wires or cables (Category-B).

Technical requirements

The cables shall be suitable for laying on racks, in ducts, trenches, conduits and underground (buried) installation with chances of flooding by water. Cables shall be flame retardant, low smoke (FRLSH) type designed to withstand all mechanical, electrical and thermal stresses developed under steady state and transient operating conditions as specified elsewhere in this specification. XLPE insulation shall be suitable for continuous conductor temperature of 90 deg. C and short circuit conductor temperature of 250 deg C. The gap between armour wires / formed wires shall not exceed one armour wire / formed wire space and there shall be no cross over / over-riding of armour wires / formed wires. The minimum area of coverage of armouring shall be 90%. The breaking load of armour joint shall not be less than 95% of that of armour wire / formed wire. Zinc rich paint shall be applied on armour joint surface of GS wires / formed wires. Outer sheath shall be of PVC black in colour. In addition to meeting all the requirements of Indian standards referred to, outer sheath of all the cables shall have the following FRLSH properties:

- a) Oxygen index of min. 29 (Test method as per IS 10810 Part-58)
- b) Acid gas emission of max. 20% as per IEC – 754(Part-I)
- c) Smoke density rating shall not be more than 60% during Smoke Density Test as per ASTM-D-2843.

Cores of three core cables shall be identified by colouring of insulation or by providing coloured tapes helically over the cores, with Red, Yellow & Blue colours. In addition to manufacturer's identification on cables as per IS, following marking shall also be provided over outer sheath:

- a) Cable size and voltage grade-To be embossed
- b) Word 'FRLSH' at every 5 meter To be embossed
- c) Sequential marking of length of the cable in meters at every one meter To be embossed / printed

The embossing / printing shall be progressive, automatic, in line and marking shall be legible. Allowable tolerances on the overall diameter of the cables shall be +/-2 mm maximum over the declared value in the technical data sheets. In plant repairs to the cables shall not be accepted. Pimples, fish eye, blow holes etc. are not acceptable. The cross-sectional area of the metallic screen strip/tape/wires shall be considered in sizing calculations.

Constructional features

Cables shall conform to IS 7098 Part-II. These cables shall be multi-stranded, compacted Aluminium conductor, XLPE-insulated, metallic screened suitable for carrying the system earth fault current. The conductor screen and insulation screen shall both be of extruded semiconducting compound and shall be applied along with the XLPE insulation in a single operation of triple extrusion process so as to obtain continuously smooth interfaces. Method of curing for 11 KV Cables shall be "dry curing/ gas curing" For the single core armoured cables; the armouring shall constitute the metallic part of the screening.

Tests

All Types and sizes of cables being supplied shall be subjected to type tests, routine tests and acceptance tests as specified below and according to relevant standards.

<u>Type Test</u>	<u>Remarks/Standards Code</u>
Conductor resistance test For Armour Wires/Formed Wires	As per IS 8130 (cl:63)
Measurement of Dimensions	
Tensile Test	
Elongation test	
Torsion test	For round wires only
Wrapping test	
Resistance test	
Mass & uniformity of Zinc Coating tests	For GS wires/formed wires only
Adhesion test	For GS wires/formed wires only
Test for thickness	For XLPE insulation & PVC Sheath
Tensile strength and elongation Test before ageing and after ageing in air oven	
Loss of mass test	For PVC Outer sheath only.
Hot deformation test	For PVC Outer sheath only.
Heat shock test	For PVC Outer sheath only.
Shrinkage test	
Thermal stability test	For PVC Outer sheath only.
Hot set test	For XLPE Outer sheath only.
Water absorption test	For XLPE Outer sheath only.
Oxygen index test	For PVC Outer sheath only.
Smoke density test	For PV C Outer sheath only.
Acid gas generation test	For PV C Outer sheath only.
Flammability test as per IEC-332 Part-3 (Category-B)	For completed cable only.

The following type tests shall be carried out on the cable:

- Insulation resistance test (Volume Resistivity method)
- High Voltage test
- Partial discharge test
- Bending test
- Dielectric power factor test
- As a function of voltage
- As a function of temperature
- Heating cycle test
- Impulse withstand test
- High voltage test
- Partial discharge test
- Acceptance Tests

Following Acceptance tests shall be carried out for each type and size of the cables on the cable drums selected at random as per sampling plan mentioned in IS: 7098 Part II

For Conductor

Tensile Test

Wrapping Test

Resistance Test

For Armour Wires/Formed Wires (If applicable)

Measurement of Dimensions

Tensile Tests

Elongation Test

Torsion Test

For Round wires only

Wrapping Test

Resistance Test

Mass of Zinc coating test

For G S wires/Formed wires only

Uniformity of Zinc coating

For G S wires/Formed wires only

Adhesion test

For G S wires/Formed wires only

Freedom from defects

For XLPE insulation & PVC Sheath

Test for thickness

Tensile strength & Elongation before ageing

Hot set test (For XLPE insulation)

For completed cables

Insulation resistance test (Volume resistivity method)

High Voltage test

Partial discharge test(for 6.35/11 KV grade of above rating of cables).

Test certificates for the cable shall be submitted during delivery of the cable.

V. 11 KV CABLE END TERMINATION & STRAIGHT THROUGH JOINT KITS

a. Scope

This specification provides for delivery of 11 KV grade outdoor type End termination, open joint & straight through joint kits suitable for installation in 50Hz 11KV distribution system. All the materials required for doing over head open joints shall be supplied by the Contractor.

b. Application

The 11 KV cable end termination & straight through joint kits are intended for use on Distribution net work, outdoor application for terminating / jointing the 11 KV grade Cables for better distribution network.

c. Codes & Standards

All standards, specifications and codes of practice referred to herein shall be the latest editions including all applicable official amendments and revisions as on date of opening of bid. In case of conflict between this specification and those (IS: codes, standards, etc.) referred to herein, the former shall prevail. All the cable end terminations & straight through joint kits shall conform to the requirements of the following standards and codes:

d. Technical requirements

- a) The Kits are to be used for 11KV XLPE type Power Cables.
- b) The Kits to be supplied must have manufactured as per latest IS and the reference there of be given with the offer.
- c) The literature for the cable jointing kits are to be used by the contractor must be supplied along with delivery of materials.
- d) The Kits shall be suitable for storage without deterioration at a temperature up to 45 0 C and unlimited self life.
- e) The contractor shall offer one year warranty after commissioning against defective design and for material / terminations and joints and for bad workmanship etc.
- f) For carrying out all the joint of the kit tenderer has to depute his representative with man and material without any extra charges.
- g) The cable termination shall be class-I termination as defined in IEEE standard 48-1975.
- h) The termination kits shall be tested as per IS-13573 with latest amendment from I & II. The test reports are to be submitted.
- i) The kits offered should have satisfactory working performance in Indian atmospheric condition.

e. General requirements of joints and terminations

The installed joints and terminations must provide the following:

- a) Complete external leakage insulation between the high voltage conductor and earth potential using anti-track heat shrink material.
- b) Electrical stress control using semi-conducting heat shrinkable tubing over the cores and by the insertion of high di-electric strength insulating material into the crutch of the termination such that electrical discharge activity does not occur in the termination after it has been energised at its rated voltage.
- c) Hermetic sealing of the interfaces between heat shrinkable materials and cable surfaces, bushings or cable lugs by use of track resistant hot melt adhesive which can accommodate the creep and relaxations that may occur with recovered heat shrink materials. This sealant shall be pre-coated inside the heat shrinkable components and activated by the heat applied to shrink the components which shall be in excess of 125 Deg.C.
- d) Uniform adhesive flow from the adhered heat shrink component into the adjoining surfaces will be used as an indicator that shrinking is complete, and therefore, the adhesive must be suitable for this purpose.
- e) Outdoor terminations shall incorporate a design feature to prevent flexing of the terminated cores under short circuit conditions.
- f) Joints and terminations must be insensitive to cable manufacturers tolerances allowed under BSS 6480-1969.
- g) The length of core insulation required is 450 mm per phase.
- h) Copper braid should be provided to connect the metal shield of XLPE cable and to make electrical contact with the outer screen of the joint for transition joints.

VII. HDPE (HIGH DENSITY POLYETHYLENE) PIPE

HDPE pipe shall be provided for laying the HT cable at road crossing/hard surfaces. The HDPE pipes shall be 110 mm. dia: with thickness of not less than 5 mm. The HDPE pipe shall be made from high-density polyethylene (HDPE) resins meeting the following requirements:

The HDPE material supplied under this specification shall be high density, high molecular weight conforming to relevant IEC/BIS. The HDPE material shall conform to ASTM D 3350/IS 4984. Suitable size PVC flexible pipe with collar shall be provided for the end portion of HDPE pipe.

VIII. PLATE EARTHING

The earthing with plate earth shall be done as per IS 3043/1987. The life of the earth rod / CU plate / pipe shall be minimum 20 years and earth resistance of the installation after earthing shall be < 1 ohm. The earthing conductor (protective conductor from earth electrode up to the main earthing terminal/ earth bus, as the case may be) shall be of CU flat of 25mmX3mm . confirming to I.S. 3043, and in the form of wire or strip as specified.

Applicable Standards

Earthing Materials shall conform to latest applicable standards

IS: 2062 Grade A Quality	Specification for MS angles, MS channel & MS Flat
IS: 2062	Chemical & Physical composition of materials.
IS: 1852	Rolling & Cutting tolerances for Hot Rolled Steel products

GI Flat specification for earthing

The steel sections shall be re-rolled from the BILLETS/INGOTS of tested quality as per latest version of IS 2830 .The GI Flat shall be of size 40mm X 6mm. The GI Flats shall be free from any defects. The Zinc for galvanizing shall conform to grade Zen 98 specified in IS 209-1966 & IS : 4826-1979 with up to date amendments.

IX. SPECIFICATION FOR SAFETY EQUIPMENTS

- a) 11 KV Grade Rubbers Mat.

HT grade high quality Rubber mat of width of 1M, Min. 3MM thick shall be provided in front of HT Panel, covering throughout the length of panel and it shall be pasted to the floor. The applicable standard latest IS-15652.

- b) Fire Buckets

Bottom rounded Fire buckets (Min 2 no in each set) with stand filled with clean dry sand along with stand shall be provided in convenient and accessible locations . They shall be neatly painted and conspicuously marked. Sloping canopy shall also be provided over the fire buckets.

- c) First Aid Boxes and chart

2 nos of fully equipped and conspicuously marked Fist Aid Boxes shall be provided at convenient locations. First Aid Charts having first aid instructions printed in English and local language shall be affixed in noticeable places.

- d) Fire Extinguishers
 1 No. fire extinguisher of DCP/CO2 type of 4.5kg shall be provided at suitable locations. All the extinguishers shall be of reputed make and should have been approved by Tariff Advisory Committee of India or any other international authorities like FOC - London/NFPA-USA. All extinguishers shall be ISI marked. All the portable extinguishers shall be of free standing type and shall be capable of discharging freely and completely in upright position. Each extinguisher shall have the instructions for operating the extinguishers on its body itself. All extinguishers shall be supplied with initial charge and accessories as required. Portable type extinguishers shall be provided with suitable clamps for mounting on walls or columns. All extinguishers shall be painted with durable enamel paint of fire red colour, conforming to relevant Indian Standards. Dry chemical powder type extinguisher shall conform to IS: 2171. Carbon Dioxide type extinguisher shall conform to IS:2878.
- e) HT grade Rubber gloves
 One set of high quality rubber gloves of HT grade conforming to relevant Indian Standards shall be provided at noticeable locations.
- f) Other safety equipments.
 A standard danger board notice in English, Hindi and local language with sign of skull & bones shall be affixed permanently at noticeable places. Warning strips "ISOLATE POWER SUPPLY BEFORE OPENING THE PANEL COVER" shall be affixed at the rear side of each panel.
- g) 11 KV Grade high quality Rubber mat of width 1 m shall be provided in front of LBS & RMU. The applicable standard is IS- 15652. It shall be laid throughout the length of the panels and properly pasted to the floor.
- h) A standard danger board notice in English and Malayalam with sign of skull & bones shall be affixed permanently at noticeable places. Warning strips "ISOLATE POWER SUPPLY BEFORE OPENING THE PANEL COVER" shall be affixed at the rear side of each panel. Only One number earthing rod shall be supplied

I. **TECHNICAL SPECIFICATION-INSTALLATION OF EQUIPMENTS**

1.1. Scope

This specification covers the engineering requirements for erection/installation, testing and commissioning of equipment/items and its associated works.

1.2. Standards

Erection, testing and commissioning of the equipments covered shall be done as per standard codes of practice and shall comply with requirements of following Indian Standards and other relevant standards, Indian Electricity Rules and acts and also to the regulations that are in force at the place of installation.

IS: 1255 : Code of practice for installation and maintenance of power cables
 Up to and including 33 kV rating.

IS : 5216 : Guide for safety procedures and practices in Electrical work

IS :100118 : Code of practice for selection, installation and maintenance for
 Switchgear and control gear-Part-III Installation.

IS : 13408 : Code of practice for the selection, installation and maintenance of
 electrical apparatus for use in potentially explosive atmospheres
 (other than mining application of explosives processing and manufacture).

IS: 3043/87 : Code of practice for installation & maintenance of earthing
 installation.

1.3. Reference

Following documents shall be read in conjunction with this specification

- (iv) Scope of work and special requirements
- (v) Schedule of items of work
- (vi) Engineering Specification and Data sheet of General requirements of Electrical system.

1.4. GENERAL CONDITIONS FOR INSTALLATION OF EQUIPMENTS

- i) The erection/installation, testing and commissioning shall be carried out in accordance with specification, data sheets, drawings, manufacturer's recommendations, and relevant standards or as directed by owner/Engineer-In-Charge. Requirements regarding erection/installation, testing and commissioning of switchboards, cables, etc, are generally explained here in. It is the responsibility of the contractor to supply all equipment, items, accessories, materials, tools, tackles, transporting, and lifting vehicles, consumables etc. required for unpacking, checking, transportation, storage, safe custody, installation, erection, testing, commissioning, return of unused equipment/items which are supplied from owner's stores and handing over of the installation to the entire satisfaction of owner.
- ii) The erection scope shall include supply of all hard wares and accessories such as bolts, nuts, washers, gaskets, cable termination accessories, lugs, paint, primer, sand, etc. required for completeness of the work. All consumable materials such as insulation, tape, cleaning and paint brushes, welding electrodes, rust preventive materials, jute, cotton waste, hack saw blades, bolts, nuts, inhibitive grease, fuel, lubricants, etc, and any other material required in carrying out the work but not for incorporation in to the permanent work, shall also be included in the scope of contractor.
- iii) The equipment/items to be erected shall be handled with care by experienced workers under the guidance of the competent supervisor. Proper handling and transporting equipments are to be used and dragging is to be avoided.
- iv) The equipment/items supplied by the owner, shall normally be kept at their stores. The contractor shall inspect these items at the stores by unpacking the containers, if necessary. Responsibility of safe custody of materials after delivery and till handing over shall rest with the contractor. Unused materials and containers shall be returned to the stores. The items supplied by the owner shall be transported from the point of storage to the point of erection / installation using proper capacity transporting vehicles. The scope shall include unpacking the containers, assembling parts, fixing loose items, components, etc. Materials supplied by the contractor or issued by the owner shall be given suitable protection against weather, dust and vermin. In storage places, equipments shall be placed over wooden sleepers to keep them above ground. Before carrying out erection/installation works of any item, proper care regarding leveling, alignment, access to working parts, facilities for removing the items for repair, statutory clearance, etc. shall be taken.

- v) Foundation bolts, nuts, lock nuts, washers, etc. will normally be supplied by the equipment supplier. Any further requirement of these items shall be under the scope of contractor. The equipment shall be installed on the foundation bolts firmly such that there will not be any vibration during operations. For mounting of equipment/items on the walls/ columns / supports, suitable MS/GI brackets shall be fixed/grouted.
- vi) Electrical connections shall be done with great care using spring washers, bimetallic strips, conducting grease, etc. wherever required to ensure good contact without creating undue stresses. Copper bus bar joints shall be made after tinning the contact area. Supply of all required accessories or electrical connections shall be included in the contractor's scope. Discrepancies if any found between drawings/statutory requirements and actual conditions at the site, shall be immediately brought to the attention of owners representative. If any modification is found required in the writing or to suit site condition the same shall be carried out as per the instruction of the Engineer-In-Charge without any extra cost.
- vii) All equipments under erection shall be kept properly cleaned and free of dust, vermin, moisture, etc. After erection, it shall be ensure that non-foreign materials, tools or tackles are left in the equipment. All unused cable entries, cutouts, etc. shall be sealed properly. For hazardous area, blanking plugs suitable for the area classification applicable shall be used.
- viii) All tests shall be carried out in the presence of owner's representative and test shall be recorded on an approved proforma duly certified. The records of all tests shall be submitted to the purchaser's representatives. All interconnected wiring shall be checked thoroughly for correct connection with the wiring and schematic drawings of the manufacturer and the drawings supplied by owner before energizing.
- ix) All power and bus bar connection shall also be thoroughly inspected and checked for connections, foreign materials, tightness, etc. before energizing the equipment All components within the main equipment shall be tested for proper performance and correct operation before commissioning the equipment.
- x) All labeling shall be checked for correctness. All nuts, bolts, clamps, joints, connections, etc. shall be checked for tightness and tightened wherever required. All moving parts shall be checked for its correct movement and proper lubrication. Apply lubrication wherever required. All equipment containing liquid shall be checked for correct quantity filling and all gaskets, walls, etc, shall be checked for leak proof. Oil filling, if found required, shall be done with dry and clean oil. Gaskets shall be replaced if found required. It shall be ensured that all CT leads are loaded or shorted prior to testing and commissioning. Insulation tests shall be carried on all electrical devices, whether specifically mentioned or not, as per this work after properly cleaning these devices.
- xi) All the relays and its settings after commissioning shall be furnished to owner detailing relay type number, panel number etc. In case of any component of an equipment supplied by the owner is found to faulty/unsuitable, the same shall be

replaced by the new one issued by owner. All relays, before installation, the rating, range and auxiliary supply voltages for the relay should be checked against drawings/schematic/schedule.

1.5. Civil and structural works

- a) Miscellaneous civil works associated with the erection/installation such as excavation, dewatering and refilling of earth work for earth pits and cable trench, chipping, grouting, small cutting, etc, on floors/walls/columns/structures and bringing back the same to original finish, grouting of supports, providing suitable fixing arrangements for cables, push button stations, DBs etc., shall be included in the rates quoted for erection of the respective items, unless specifically excluded in the “Schedule of Items of Work”. All structural works associated with cabling, earthing, equipment erection and supporting arrangements shall be included in the scope of the contractor. All the welding and cutting works shall be carried out by certified welders. Painting shall be done on all MS materials provided, by the contractor such as base channels, frames, supports, pedestals, cable trays/racks/risers, enclosures, boxes, conduits, chequered plates, etc. Before painting, the surface should be thoroughly scraped and cleaned to remove dust, grease, plaster or any other foreign materials. It is the responsibility of the contractor to supply and install all the required materials for painting including paint. Cement concrete footing shall be provided for, cable trays/racks/risers, pedestals, supports, etc. Footing shall be provided using 1:2:4 PCC with 20mm broken stone. It is responsibility of the contractor to supply and install all materials such as river sand, reinforcement rods, 20mm broken stone, etc. without any extra cost to owner. All concrete works and grouting shall be cured for a minimum period of 48 hours.
- b) Chipping, grouting, etc as recommended shall be done for completion and installation work on the finished floor, wall, roof, etc. It is the responsibility of the contractor to supply all necessary materials and to bring the disturbed surface to the original finish. Touch painting of scratches found on equipment, other painted metallic surfaces, galvanised, etc. associated with this work is also included in the scope of contractor without any extra cost. Base steel structures shall be painted with 2 coats of epoxy primer and 2 coats of epoxy paint.

1.6. Standard requirements for testing and commissioning

- a. The standard requirements for testing and commissioning are furnished below.
- b) All tests shall be carried out in the presence of Owner's representative and tests shall be recorded on an approved format duly certified. The records of all tests shall be submitted to the purchaser's representative.
- c) All interconnected wiring shall be checked thoroughly for correct connections with the wiring and schematic drawings of the manufacturer before energizing. All Power and bus bar connections shall also be thoroughly inspected and checked for correctness, foreign materials, tightness, etc. before energising the equipment.
- d) All components within the main equipment shall be tested for proper performance and correct operation before commissioning the equipment. All labeling and nameplates shall be checked for correctness. All nuts, bolts, clamps, joints,

connections, etc shall be checked for tightness and tightened wherever required. All moving parts shall be checked for its correct movement and proper lubrication. Apply lubrication wherever required. All equipment containing liquid shall be checked for correct quantity filling and all gaskets, valves, etc., shall be checked for leak proofness. Oil filling if found required shall be done with dry and clean oil. Gaskets shall be replaced if found required. The condition of the oil shall be tested in accordance with IS-335.

2. INSTALLATION OF RMU.

- a) The Equipments shall be erected at convenient locations as per the instruction from the Engineer in charge. All civil works, foundation including supply and laying of MS angles, channels and grouting fasteners for erection shall be responsibility of the Contractor. After installation of the equipments they shall be tested and commissioned in the presence of Engineer- in- charge in accordance with IE rules, relevant standards and as per requirements. All backfill of the site must be compacted before final site finish.
- b) It is necessary to measure the soil resistivity at the site even before the foundation pits are dug. The earth electrodes shall be installed and the required earth resistance is obtained. It may even become necessary to shift the location in case the desired earth resistance cannot be achieved. Hence to avoid possible relocation in such cases and consequent additional expenditure, the earth electrodes shall be installed before commencing the associated works. The contractor shall note and keep in mind that the success of the operation of the RMU depends on the way it is erected to a large extent and also depend on leveling of foundation. The flooring on which the RMU is erected shall be perfectly leveled using a spirit level. The position of the hold down bolts shall be fixed by using a suitable template made to suit the corresponding holes in the equipment. The verticality of the panels shall be checked and ensured. Only appropriate foundation-hold-down bolts, nuts and check nuts shall be used and all the necessary spring and flat washers shall be provided. Suitable packing shims shall be used wherever necessary under the bottom of the frame for adjustment and leveling and checked with a spirit level. All the units shall then be assembled at site.
- c) After installation of RMU, it shall be tested and commissioned in the presence of Engineer- in- charge in accordance with IE rules, relevant standards and as per requirements. The bus bars shall be connected properly with fishplates and tightened giving the appropriate tightening torque, wherever necessary using a torque wrench. These bolted joints shall be properly addressed with the insulating plastic compound pressed to form a spherical or elliptical shape and exclude trapped air pockets. The same shall be covered with PVC adhesive tapes to form a suitable protective covering. Adequate precaution shall be taken to prevent flashover between metallic portion of the panel and the bus bars.
- d) The locations shall be finalized in consultation with the Engineer in charge. The provision for the cable entry shall be from bottom and necessary space/ provision shall be made for drawing the cables conveniently into the feeder pillar. The

verticality of the panels shall be checked and ensured. Only appropriate foundation-hold-down bolts, nuts and check nuts shall be used and all the necessary spring and flat washers shall be provided. Suitable packing shims shall be used wherever necessary under the bottom of the frame for adjustment and leveling and checked with a spirit level. All the units shall then be assembled at site if necessary.

- e) HT grade high quality Rubber mat (3MM Thickness) of width 1m shall be provided in front of HT/MV panels. The applicable standard is IS-15652. It shall be laid throughout the length of the panels and properly pasted to the floor.
- f) A standard danger board notice in English, Hindi and local language with sign of skull & bones shall be affixed permanently at noticeable places. Warning strips “ISOLATE POWER SUPPLY BEFORE OPENING THE PANEL COVER” shall be affixed at the rear side of each panel.
- g) RMU shall be connected to the existing earth pit with suitable strips.

3. INSTALLATION OF COMMERCIAL METERING UNIT

The metering arrangements shall be provided for recording the power drawn by the consumer. The wiring diagram for the interconnection of the individual single phase CTs shall be provided inside the panel in such a manner so that it does not deteriorate with time. Facilities shall be provided at terminal blocks for star/delta formation, short circuiting and grounding of CT secondaries. All PTs shall be protected by suitable current limited fuses both at primary & secondary. All the internal wiring for panel shall be done by the firm. The meter shall be got tested and calibrated by KSEB and certificate shall be submitted.

4. PROVIDING PLATE EARTHING

Plate earthing shall be provided as per IS 3043/1987 using CU plates of size 600MMx600MMx3MM. The plate earth pits shall be interconnected with 40 mm x 5 mm hot dipped GI strip. Earth pit shall be provided with earth chamber and covered with concrete/CI slab of sufficient size and quantity. Identification of earth electrodes connected to equipments shall be done properly. The earth pits shall be cleaned, covered and named. Metallic parts of all the equipments including fencing shall be earthed by 2 separate and distinct connections with earth. Earthing system shall be mechanically strong to retain electrical continuity during the life of installation.

The size & material of earthing conductor and nos. of earth pits are worked out after arriving the fault level of installation by the contractor. The CoPT shall provide available technical inputs to the contractor. If the data provided by the employer is insufficient, the contractor shall collect the same from the local CEI dept., as per requirements. If any changes required by CEA/CEI etc the same is within scope of contractor. The contractor shall be responsible to prepare shop drawings for routes of complete system along with necessary calculations before execution for approvals along with location of pits as per site condition. The drawings given by employer are indicative and it shall be contractor's responsibility to achieve the necessary values for earthing. Contractor shall also incorporate necessary requirements as per local codes / approving authorities.

Following activities shall be carried out for the earthing installation.

Minimum 2 mt. center to center distance between two earth pits and the bore should be minimum 10ft deep. All earth pits of same category shall be interlinked with earthing strips. The earth conductors (Al.) inside the building / built in trench shall be properly

clamped / supported on the wall with Galvanized Iron clamps and Mild Steel Zinc Passivated screws / bolts. The conductors outside the building shall be laid at least 600 mm. below the finished ground level or as per site condition as approved by engineer. The earth conductors shall either terminate on earthing socket provided on the equipment or shall be fastened to the foundation bolt and / or on frames of the equipment. The earthing connection to equipment body shall be done after removing paint and other oily substances from the body and then properly be finished. For termination / connectors for the earth strip / wires; factory fabricated connectors shall be used. Braising and other local means for joining shall be not carried out. The connectors shall be tested as per BS EN 50164 : 2000. The measurement of Earthing stations shall be measured in units whereas earthing strips and wires shall be measured in rmt.

5. LAYING OF CABLE THROUGH TRENCHES.

5.1 Excavation of Trenches

HT cable shall be laid along the open trench/ pipes/ the excavated trench/clamping through cable tray etc. as per IS. Necessary material such as brick/ loose earth /concrete slab, fastening materials etc., if required , shall also be supplied by the contractor.

Contractor shall construct the cable trenches required for directly buried cables. The scope of work for construction of cable trenches shall include excavation, preparation of loose earth bedding, loose earth cover, supply and installation of brick or concrete protective covers, back filling and reaming, supply and installation of route markers and joint markers. The bidder shall ascertain the soil parameters prevailing at site, before quoting the unit rates. The trenches after that shall be excavated manually/by using JCB and utmost care shall be taken while excavating the trenches. The trenches shall be excavated with 50 cm width and 100 cm depth from the ground level. The trenches shall be resurfaced and provide the compaction after laying the cable.

5.2 Installation of cables

Cable drums shall be checked for any damage in transit. Insulation test of the cable shall be carried out between phases and phase to earth before unwinding the drum. Cables shall be laid direct in ground, masonry trench, pipes/closed ducts, open ducts or on racks as per requirement. When the cable has been properly straightened, the cores are tested for continuity and insulation resistance and the cable is then measured. In case of PVC cables, suitable moisture seal tape shall be used for this purpose.

5.3 Loose soil / earth cushion

When the cable has been properly straightened the trench shall be covered with 100 mm thick layer of good quality clean loose earth, then the cables shall be lifted and placed over this loose soil / earth cushion. Again, another layer of good quality clean loose earth 100mm thick should be laid and gently pulled on to the top of the cable to form a depth of 100mm from the top of the cable. The minimum envelop cushion around the cable shall not be less than 200 mm. Sufficient loose soil / earth shall be supplied by the contractor.

The cables shall be protected by precast plain RCC slab of size 20 cm x 50 cm. x 5 cm. (W x L x T) with Fe steel rods for reinforcement. The protection slabs placed on top of the loose earth shall be laid breadth wise for the full length of the cable. This protective covering shall cover all the cables and project at least 50 mm over the sides of end cables. The trenches shall be then backfilled with excavated earth free from stone or other debris and shall be rammed, watered if necessary, in successive layers, unless otherwise specified a crown of earth shall be formed to allow for subsidence. Where road or lawns are cut or curb stone displaced, these shall be made good, and all excess earth removed from site.

5.4 LAYING OF CABLE THROUGH HDPE PIPE

For road, entry into buildings and paved areas cables shall be drawn through HDPE pipes. Pipe shall be of 110 mm dia. and wall thickness not less than 5mm . Top of pipe shall be not less than 750 mm from the top surface.. All pipes shall be provided with a fish wire. Where cables have been drawn the ends shall be plugged with bituminized tape over the cables for water proofing. For longer distances and at bends draw-pits of adequate size shall be provided to facilitate drawing in of cable, if necessary. The HDPE pipes shall be joined together, if necessary with PVC/ HDPE coupling or through the Butt joint. Supply of the jointing material shall also be borne by the contractor. Laying of cables shall be carried out by skilled and experienced labourers using adequate rollers to minimize stretching of the cable/external damage to cables. Cables shall not be bent below the minimum permissible limit. The permissible limits are as follows :

Type of cable & voltage grade	Minimum bending radius
Power cable	12 D
Control cables	10 D

Where D is overall diameter of cable.

In each cable run some extra length shall be kept at a suitable point to enable one (for LT Cables) or two (for H.T cables) straight through joints to be made, should the cable develop fault at a later date. Metal screen and armour of the cable shall be bonded to the earthing system of the station on the receiving and the sending end. The erection work shall be carried out in a neat workman like manner and the areas of work shall be cleaned of all scrap materials, etc. after the completion of work in each area every day. In case the outer sheath of a cable is damaged during handling/installation, the Contractor shall repair it at his own cost, and to the satisfaction of the Engineer-in-Charge. In case any other part of a cable is damaged, the same shall be replaced by a healthy cable, at no extra cost i.e. the Contractor shall not be paid for installation and removal of the damaged cable. All cable terminations shall be appropriately tightened to ensure secure and reliable connections. The Contractor shall cover the exposed part of all cable lugs with insulating tape, sleeve or paint.

5.6 DRAWING OF CABLE BY HDD

Cable shall be drawn through road crossings / hard surfaced areas by horizontal direct drilling at a minimum depth of not less than 3 m except at both ends. The length of the route for providing HDD shall be minimum possible and shall be finalized after the approval of Engineer in charge.

HDD shall be done with 110 mm HDPE pipe having thickness of not less than 5 mm.

Method of drilling

The pipe shall be pulled through the borehole of sufficient depth & size after successfully reaming the borehole. Once pull back operations have commenced, the operation must continue without interruption until the pipe is completely pulled through the reamed hole.

The Contractor shall take all care and necessary precautions to protect existing structures, utilities and services in planning and execution of the Works for which the contractor shall carry out proper sounding before starting the HDD work. Any damage to adjacent properties that are not part of this work shall be repaired and restored to its original condition at the Contractor's expense. The Contractor shall be responsible for the identification and protection of services where these are crossed by construction activities. Where crossing of roadways and railways are involved, the Contractor shall be required to record and report any ground settlement to the satisfaction of the controlling agencies. Where utilities and pipelines are involved the Contractor shall monitor ground settlement or heave directly above and 3 m before and after the utility or pipeline intersection. The Contractor shall cease operations when monitoring points indicate any surface disruption. Necessary clearances from the concerned authority shall be obtained by the contractor.

Precautions to be taken

All necessary measures must be taken to ensure that excavations are left in a safe condition, including the erection of suitable hard barricades, warning signs and hazard lights. The earthworks shall be set out in accordance with the design drawings. All excavations shall be made to the depth and extent as shown on the Drawings with proper allowance for fill, additional cover (where required) and formwork. The excavations shall be kept free and clear of loose materials, water and rubbish. After satisfactory completing, excavated materials for the HDD operations shall be removed, the Contractor shall prepare the bottom of all pits to the same specification as required for the pipe foundation. The Contractor shall ensure that the terminal sections of pipe that are joined are connected with Central Plastics Electrofusion Couplings or connectors with tensile strength equivalent to that of the pipe being joined.

Safety

The Contractor shall undertake works in accordance with appropriate safety requirements by local & state regulations. Safety measures shall include, but not be limited to, personal protective equipments, operating of machinery within job site, and storage and transportation of materials and equipments.

After the HDD work, the HT cable shall be drawn through the pipe as per the schedule. Due Care shall be taken not to damage the cable while drawing.

Cable tags and marker

Each cable and conduit run shall be tagged with numbers that appear in the cable and conduit schedule. The tag shall be of aluminum with the number punched on it and securely attached to the cable conduit by not less than two turns of 20 SWG GI wire conforming to IS: 280. Cable tags shall be of rectangular shape for power cables and of circular shape for control cables. Alternately, the contractor may provide cable tags made up of nylon, cable marking ties of 'TY-CAB' or equivalent type with cable number heat stamped on the cable tags. Location of cables laid directly underground shall be clearly indicated with cable marker made of galvanized iron plate. Location

of underground cable joints shall be indicated with cable marker with an additional inscription "Cable joint". The marker shall project 150mm above ground and shall be spaced at an interval 100 meters and at every change in direction. They shall be located on both sides of road and drain crossings. Cable tags shall be provided on all cables at each end (just before entering the equipment enclosure), on both sides of a wall or floor crossing, on each duct/conduit entry. Cable tags shall be provided inside the switchgear, motor control centers, control and relay panels etc., wherever required for cable identification, such as where a number of cables enter together through a gland plate. The price of cable tags and markers shall be included in the installation rates for cables /conduits quoted by the Contractor. Specific requirements for cabling, wiring ferrules as covered in respective equipment section shall also be complied with.

6. CABLE ROUTE MARKER

(a) Route markers shall be provided along the runs of cables at locations approved by the Engineer in charge and generally at interval as suggested by Engineer in Charge. Markers shall also be provided to identify change in the direction of the cable route and at locations of underground joints. Route markers shall be fixed firmly with cement concrete.

(b) Route identifiers shall be made out of RCC in 1:2:4 (cement: 2coarse sand: 4graded stone aggregate of 20mm in size) of size 75 cm x 30 cm x 10 cm shall be laid and centered over the cable. The concrete markers, shall project over the surrounding surface so as to make the cable route easily identifiable. The reinforcement shall be with 10 SWG MS rod having the size of 50mmx50mm.

(c) The words '**CoPT 11 KV CABLE/ JOINT-2021**' as the case may be, shall be engraved / inscribed on the marker.

7. PREPARING SCHEME OF INSTALLATION AND SUBMITTING THE SAME TO CEA FOR GETTING APPROVAL

The contractor shall measure the soil resistivity and prepare the scheme and get the approval from engineer in charge or authorized officer before the commencement of work. The schemes, drawings and other technical data shall be submitted to CEA for getting the approval and coordinate with CEA officials for the installation get tested during the pendency of contract. Contractor shall do liaison work with officials of CEA, and other statutory bodies for early approvals for the installation. The defects if any noticed by the CEA during his inspection shall be rectified by the contractor.

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I. APPROVED MAKES

<u>APPROVED MAKES</u>		
1	POWER & DISTRIBUTION TRANSFORMER - OIL & CRT	KEL / TELK / INTRANS/ MEGAWIN/ C&G / RAYCHEM/ SCHNEIDER / TELWANE/ ABB/ SIEMENS
2	11 KV VCB	ABB / SCHNEIDER/ SIEMENS /CG / L&T / AREVA
3	11 KV SF6 LBS RMU	ABB / SCHNEIDER/ SIEMENS /CG
4	11 KV CMU+LBS (AIR-BREAK)	INTRANS/ MEGAWIN / UNIPOWER /RESITECH
5	CMU PANELS	ABB / SCHNEIDER/ SIEMENS /CG/ INTRANS/MEGAWIN
6	UNITISED SUB-STATION	ABB / SCHNEIDER/ SIEMENS /CG/ INTRANS/MEGAWIN
7	11 KV XLPE CABLE	CCI / INCAB / UNIVERSAL / RPG / NICCO/ TORRENT / POLYCAB / PARAMOUNT / KEI / HAVELLS /PRIMECAB
8	1.1 KV XLPE CABLE	CCI / INCAB/ UNIVERSAL/ RPG/ NICCO/ TORRENT / POLYCAB / PARAMOUNT/ KEI / HAVELLS / FINOLEX / V-GUARD/ L&T / PRIMECAB / RR KABEL / GLOSTER
9	CABLE TERMINATION KIT	RAYCHEM /MAHINDRA / DENSON/3M/CCI / CABSEAL
10	TOD ENERGY METER	L&T/ ENERCON
11	ENERGY METER / AMMETER / VOLTMETER	SIMCO / MECO/ L&T/ HPL/ AE / RISHAB / SCHNEIDER / SECURE /SOCOMEK / CONZERVE /SIEMENS/ABB/C&S
12	RELAYS	ABB/ L&T/ SIEMENS / RISHAB / GE /SCHNEIDER / ALSTOM / EASUN REYROLLE / C&S
13	CURRENT / POTENTIAL TRANSFORMER	INTRANS/ KAPPA/ INDUS/ CG/ CYRO/ABB/BHEL/CG/ MEGAWIN/TRANSDELTA / KEL
14	MCCB / MCB / CONTACTOR / TIMER	LEGRAND / MERLIN GERIN / MK / ABB/ INDOASIAN / L &T / SIEMENS /SCHNEIDER / HPL
15	LT ACB	LEGRAND / ABB/ L &T /SIEMENS /SCHNEIDER
16	INDUSTRIAL PLUG WITH MCB	ABB / HAGER / HAVELLS / INDOASIAN / CROMPTON / LEGRAND / SCHNEIDER / L& T / HPL
17	PLUG SOCKETS -IP66	MENNEKES / HENSEL / MERLIN GERIN / L&T / ABB / WALTHER / CAPE
18	STREET LIGHT POLE	BAJAJ / GE / ASTER / CG / PHILIPS / K LITE / UNIQUE POLES

HT Supply To IOCL LPG-Puthuvypeen

19	LED street / flood light fittings	OSRAM / BAJAJ/ CG/ PHILIPS / WIPRO/ GE
20	LED light fittings	OSRAM / BAJAJ/ CG/ PHILIPS / WIPRO/ GE /POLYCAB / Lighting Technologies
21	BATTERY	EXIDE / AMARON / PRESTOLITE / AMCO / STANDARD FURUKAWA
22	BATTERY CHARGER	WAVES ELECTRONICS / DUBAS / AMAR RAJA / TATA LIEBERT / NUMERIC /SAFE POWER /APC / GE / DELTA / ELNIX / DB POWER
24	PVC CONDUIT PIPES / CASING & CAPPING	BALCO/ ATUL/ GEO/ CLIPSAL/ PRECISION/ AVONPLAST/ KONSEAL
25	HDPE PIPE/ FLEXIBLE HOSE	KONDOOR or any other make with BIS
26	WIRING CABLE	FINOLEX/ QFLEX/ RR KABEL/ RPG CABLES/ LAPP KABEL/ V-GUARD/ HAVELLS/ L&T/ RALLISON
27	INSTRUMENTATION / TELEPHONE CABLES	TRACO / HINDUSTAN CABLES / DELTON / FINOLEX / USHA BELTRON / PRIMECAB / VIDYA
28	MODULAR SWITCHES/ PLUG SOCKETS/ CEILING ROSE	ANCHOR/ MK/ LEADER / CRABTREE/SIEMENS/ FINOLEX/LEGRAND/ABB / INDOASIAN
29	MV PANEL / DISTRIBUTION BOARD	ABB/ INTRANS/ MEGAWIN/HESSEL/ WAVES/POWER CONTORLS / ABB /L&T/ SIEMENS/SCHNEIDER /HENSEL/MENNEKAS/HAGGER/ IMPERIAL
30	CEILING/ WALL MOUNTED / EXHAUST FANS	CROMPTON / BAJAJ / USHA / KHAITAN / HAVELLS / ORIENT / ALMONARD
31	UPS	DB POWER/ TATA LIEBERT / NUMERIC/ SAFE POWER/ APC/ GE / DELTA/ SOCOMEC / VGUARD / EMERSON
32	AIR-CONDITIONER	VOLTAS / BLUE STAR / CARRIER / LG / HITACHI / DAIKIN
33	DIESEL ENGINE	CUMMINS / ASOK LEYLAND / GREAVES COTTON / CATTER PILLAR / MITSUBISHI/ VOLVO / KIRLOSKAR / MAHINDRA
34	ALTERNATOR	CROMPTON GREAVES / STAMFORD / LEROYSOMER / KIRLOSKAR / KEL / BHEL
35	FRP CABLE TRAY	PUSTRON/ SUMIP/ ERCON OR FIRM HAVING ISO AND CERTIFICATES AS PER THE TENDER SPECIFICATION .
36	GI CABLE TRAY	PUSTRON/ SUMIP/ ERCON/L&T OR REPUTED MAKE WITH ISO CERTIFICATION.

SECTION V

**SECTION V
COCHIN PORT TRUST**

**No. F2/T-22/HT Supply-IOCL LPG-Puthuvype/2020-M
PROVIDING HT SUPPLY TO M/S. INDIAN OIL CORPORATION LIMITED
FOR THE LPG IMPORT TERMINAL AT PUTHUVYPEEN**

(PLEASE NOTE: The IOCL LPG Terminal being a project of National importance, the power supply shall be made available at the terminal on or before 15th June 2021 as per Schedule. The bidders shall ensure that the project is completed as per schedule and no extension will be granted)

Drawings

Attached separately

SECTION VI

SECTION -VI
COCHIN PORT TRUST
MECHANICAL ENGINEERING DEPARTMENT
Tender No: **F2/T-22/HT Supply-IOCL LPG-Puthuvype/2020-M**
“PROVIDING HT SUPPLY TO M/S. INDIAN OIL CORPORATION LIMITED FOR
THE LPG IMPORT TERMINAL AT PUTHUVYPEEN”

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| | 3. Form of Bid |
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| | 6. Annexure (1 to 15) |
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**SECTION VI
COCHIN PORT TRUST
No. F2/T-22/HT Supply-IOCL LPG-Puthuvype/2020-M
PROVIDING HT SUPPLY TO M/S. INDIAN OIL CORPORATION LIMITED
FOR THE LPG IMPORT TERMINAL AT PUTHUVYPEEN
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SECTION VI
COCHIN PORT TRUST
No. F2/T-22/HT Supply-IOCL LPG-Puthuvype/2020-M
PROVIDING HT SUPPLY TO M/S. INDIAN OIL CORPORATION LIMITED
FOR THE LPG IMPORT TERMINAL AT PUTHUVYPEEN

(PLEASE NOTE: The IOCL LPG Terminal being a project of National importance, the power supply shall be made available at the terminal on or before 15th June 2021 as per Schedule. The bidders shall ensure that the project is completed as per schedule and no extension will be granted)

1. PREAMBLE TO BILL OF QUANTITIES

2. General Instructions

2.1. General

- 2.1.1.** This Bill of Quantities must be read with the Drawings, Conditions of Contract and the Specifications, and the Contractor shall be deemed to have examined the Drawings, Specifications, General Conditions of Contract and to have acquainted himself with the detailed descriptions of the Works to be done, and the way in which they are to be carried out.
- 2.1.2.** Notwithstanding that the work has been sectionalized every part of it shall be deemed to be supplementary to and complementary of every other part and shall be read with it or into it so far as it may practicable to do so.
- 2.1.3.** The detailed descriptions of work and materials given in the Specifications are not necessarily be repeated in the Bill of Quantities.
- 2.1.4.** The Contractor shall be deemed to have visited the Site before preparing his tender and to have examined for himself the conditions under which the work will proceed and all other matters affecting the carrying out of the works and cost thereof.
- 2.1.5.** The Tenderer will be held to have familiarized himself with all local conditions, in so far as they affect the work, means of access and the locality of existing services, in order to execute the Works measured and described hereinafter. No claims for want of knowledge in this respect will be reimbursed.

2.2. Rates and Prices to be Inclusive

- 2.2.1.** Rates and prices set against items are to be the all-inclusive value of the finished work shown on the Drawings and/or described in the Specification or which can reasonably be inferred there from and are to cover the cost of provision of plant, labour, supervision, materials, test charges, freight, transportation, erection, installation, performance of work, care of works, insurance, maintenance, overheads and profits and every incidental and contingent cost and charges whatsoever including all taxes and duties such as turnover tax and every kind of temporary work executed or used in connection therewith (except those items in respect of which provision has been separately made in the Bills of Quantities) and all the Contractor's obligations under the Contract and all matters and things necessary for the proper completion and maintenance of the Works.
- 2.2.2.** The Specifications are intended to cover the supply of material and the execution of all work necessary to complete the works. Should there be any details of

construction or material which have not been referred to in the Specifications or in the Bill of Quantities and Drawings, but the necessity for which may reasonably be implied or inferred there from, or which are usual or essential to the completion of all works in all trades, the same shall be deemed to be included in the rates and prices entered in the Bill of Quantities. The rates and prices are to cover the item as described in the Bill of Quantities and if there is inconsistency in the description between the Bill of Quantities, Specifications or Drawings, the interpretation will be done according to General Conditions of Contract.

- 2.2.3.** The quantities given in the Bill are approximate and are given to provide a common basis for tendering. They are not to be taken as a guarantee that the quantities scheduled will be carried out or required or that they will not be exceeded. The Employer / Engineer reserves the right to delete any item and / or increase / reduce quantities indicated in the Bills of Quantities at any time. Payment will be made according to the actual quantities of work ordered and carried out in the contract. However, the rates quoted shall be valid for any extent of variation in quantity of each individual item provided that the total contract value does not get altered by more than indicated in conditions of contract. No claim whatsoever for extra payment due to variation of quantities within the above said limit would be entertained.
- 2.2.4.** The drawings for tender purposes are indicative only of the work to be carried out. However, the Tenderer must allow within his price for the items of work included in the Tender Documents for the details which will appear on subsequent drawings developed for construction purposes. Rate and price shall include any additional design/ detailing to be carried out by contractor.
- 2.2.5.** The rates and prices shall include (except where separate items are given) for the provision and operation of the following items, for compliance with the Condition of Contracts, Special Conditions, the specifications and Tender drawings:
- i) Supervision and labour for the Works;
 - ii) All materials, installation/erection, handling and transportation;
 - iii) All Contractor's Equipment;
 - iv) All testing, commissioning, insurance, maintenance, security, welfare facilities, overheads and profit and every incidental and contingent costs and charges whatsoever including;
 - v) All temporary fencing, watching, lighting, sanitary accommodation, general security arrangements, welfare facilities and first aid provision;
 - vi) Provision and maintenance of Contractor's Site offices, cabins, huts, maintenance and storage areas;
 - vii) All taxes and duties including General Tax, Turn-Over tax, Duties etc.
 - viii) All necessary temporary services including fresh water, compressed air lines, electrical cabling and switchgear, telephone, walkie-talkie and facsimile facilities
 - ix) The maintenance of all Contractor's services;
 - x) All insurances for the Works;
 - xi) Allow for complying with all environmental aspects as specified;
 - xii) For carrying out hot work of any kind contractor should consider safety of vessel in adjoining berth;
 - xiii) Detail design of components of temporary works, wherever necessary as directed by Engineer.

2.3. Method of Measurement

Standard Method: The work included in Bill of Quantities once completed will be presented to the Engineer's representative for checking quality and quantity of work. The Engineer's representative after satisfying himself issue a certificate to that effect. Unless stated or billed otherwise quantities shall be measured in accordance with Indian Standard Code No.1200 for civil work and shall be not as they are provided in the works. The rates and prices shall include whatsoever allowance is considered to be necessary for wastage, working spaces, construction slopes and batters.

The mode of measurement and payment described in the relevant technical specifications shall apply for the relevant items.

2.4. Currency

2.4.1. All monetary reference herein and the Bill of Quantities shall be priced in Indian Rupee Currency.

**SECTION VI
COCHIN PORT TRUST**

**No. F2/T-22/HT Supply-IOCL LPG-Puthuvype/2020-M
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(PLEASE NOTE: The IOCL LPG Terminal being a project of National importance, the power supply shall be made available at the terminal on or before 15th June 2021 as per Schedule. The bidders shall ensure that the project is completed as per schedule and no extension will be granted)

2. BILL OF QUANTITIES

**Bill of Quantities attached separately as uploaded in the website
www.tenderwizard.com/CPT**

“Price Bid” shall contain Bill of Quantities duly filled in and fully priced, which shall be submitted only in e-tendering mode in the above mentioned website.