

	<b>KOCHI METRO RAIL LTD</b> <b>(WATER METRO PROJECT)</b>	<b>FUNDING BY</b>  <b>KFW</b>
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**SCHEDULE-18: LETTER OF CONFIRMATION FOR ACCEPTANCE OF TENDER CONDITIONS**

[On Tenderer's Letter Head]

To:  
 General Manager  
 KMRL, Kochi  
 Kerala (India)

**Subject: RFP for Design, Build, Supply, Delivery, Installation, Testing and Commissioning of Electric Vehicle Supply Equipment (EVSE) including related Electrical Infrastructure for Kochi Water Metro Project (KWMP), Kochi, Kerala, India**

We hereby unconditionally accept of all the terms and conditions of the Tender Document along with all Corrigenda and clarifications to the queries.

For and on behalf of [Name of the Tenderer]

.....

[Signature]

.....

[Name of the person duly authorized to sign the Tender on behalf of the Tenderer]

.....

[Title of the person signing the Tender]

.....

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**SCHEDULE-19: ACCEPTANCE AND CONFIRMATION OF SITE VISIT AND SITE CONDITIONS**

[On Tenderer's Letter Head]

To:  
 General Manager  
 KMRL, Kochi  
 Kerala (India)

**Subject: RFP for Design, Build, Supply, Delivery, Installation, Testing and Commissioning of Electric Vehicle Supply Equipment (EVSE) including related Electrical Infrastructure for Kochi Water Metro Project (KWMP), Kochi, Kerala, India**

We, M/s ..... [\* Name of the Company] have visited the sites in connection with Tender for RFP for Design, Build, Supply, Delivery, Installation, Testing and Commissioning of Electric Vehicle Supply Equipment (EVSE) including related Electrical Infrastructure for Kochi Water Metro Project (KWMP), and hereby confirm and accept the following, that:

- (a) we have visited each site location and familiarize ourselves with the site conditions, hydrological and climatic conditions for complete assessment of preparation and submission of the bid prices,
- (b) the extent and nature of works to be executed have been assessed in line with the site information data provided in this RFP and confirm that if there is a change in information observed during course of execution, we shall not claim any compensation on account of this,
- (c) we shall not claim any additional compensation, what so ever, for any kind of variation of items, if the same are missed and not accounted during submission of financial proposal,

(Signature of Bidder with Seal)



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**SECTION-V**  
**ELIGIBILITY CRITERIA AND SOCIAL AND ENVIRONMENTAL  
RESPONSIBILITY**

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### Eligibility in KfW -Financed Procurement

1. Financing allocated by KfW has been entirely untied since \_\_\_\_\_ To the exception of any equipment or any sector, which is subject to an embargo by the United Nations, the European Union or Germany, all goods and services are eligible for KfW financing regardless of the country of origin of the supplier, contractor, provider or subcontractors, inputs or resources used in the implementation processes.
  
2. Natural or legal persons (including all members of a joint venture or any of their subcontractors) shall not be awarded an KfW-financed contract if, on the date of submission of an application or of a bid or on the date of award of a contract, they:
  - (i) are bankrupt or being wound up or ceasing their activities, are having their activities administered by the courts, have entered into receivership, or are in any analogous situation arising from a similar procedure;
  - (ii) have been convicted within the past five years by court decision, which has the force of *res judicata* in the country where the project is implemented, of fraud or corruption or any other offence committed during the procurement or performance of a contract, unless they provide supporting information together with their Statement of Integrity (Form available as Appendix to Letter of Bid) which shows that this conviction is not relevant in the context of this KfW financed project;
  - (iii) are listed for financial sanctions by the United Nations, the European Union and/or Germany for the purposes of fight against terrorist financing or threat to international peace and security;
  - (iv) have committed serious professional misconduct within the past five years during the procurement or performance of a contract, as evidenced by any means by the Employer;
  - (v) have not fulfilled their obligations regarding the payment of social security contributions or taxes in accordance with the legal provisions of the country where they are established or the Employer's country;
  - (vi) have been convicted within the past five years by court decision, which has the force of *res judicata* of fraud or corruption or any other offence committed in the context of an KfW-financed contract procurement or performance ;
  - (vii) Are subject to an exclusion decision of the World Bank, and are listed on the website <http://www.worldbank.org/debarr>, unless they provide supporting information together with their Statement of Integrity (Form available as Appendix to Letter of Bid) which shows that this exclusion is not relevant in the context of this KfW-financed project
  - (viii) have committed misrepresentation in documentation requested by the Employer as part of the contract procurement procedure;
  
3. Bidders that are Government-owned enterprises or institutions may participate only if they can establish that they (i) are legally and financially autonomous (ii) operate under commercial law. To

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be eligible, a government-owned enterprise or institution shall establish to the Agency's satisfaction, through all relevant documents, including its Charter and other information the Agency may request, that it: (i) is a legal entity separate from their government (ii) does not currently receive substantial subsidies or budget support; (iii) operates like any commercial enterprise, and, inter alia, is not obliged to pass on its surplus to their government, can acquire rights and liabilities, borrow funds and be liable for repayment of its debts, and can be declared bankrupt.

4. In order to promote sustainable development, KfW seeks to ensure that internationally recognised environmental and social standards are complied with. Candidates for KfW financed contracts shall consequently undertake in the Statement of Integrity to:
  - (i) comply with and ensure that all their subcontractors comply with international environmental and labour standards, consistent with applicable law and regulations in the country of implementation of the Project, including the fundamental conventions of the International Labour Organisation (ILO) and international environmental treaties;
  - (ii) adopt any environmental and social risk mitigations measures as defined in the environmental and social management plan or in the environmental and social impact notice issued by the Employer.

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## SECTION-VI

### AGENCY POLICY-CORRUPT AND FRAUDULENT PRACTICES

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### Corrupt and Fraudulent Practices Policy

The Employer, the Implementing Agency and the contractors, suppliers or consultants must observe the highest standard of ethics during contract procurement and performance.

By signing the Statement of Integrity (form available as Appendix to Letter of Bid) the contractor, supplier or consultant declares that (i) *“it did not engage in any practice likely to influence the contract award process to the Employer’s detriment, and that it did not and will not get involved in any anti-competitive practice”*, and that (ii) *“the negotiation, the procurement and the performance of the contract did not and shall not give rise to any act of corruption or fraud”*.

Moreover, the Agency requires including in the Bidding Documents and Agency financed contracts a provision requiring that bidders and contractors, suppliers and consultants will permit the Agency to inspect their accounts and records relating to the procurement and performance of the Agency-financed contract, and to have them audited by auditors appointed by the Agency.

The Agency reserves the right to take any action it deems appropriate to check that these ethics rules are observed and reserves, in particular, the rights to:

1. reject a proposal for a contract award if it is established that during the selection process the bidder that is recommended for the award has been convicted of corruption, directly or by means of an agent, or has engaged in fraud or anticompetitive practices in view of being awarded the contract;
2. declare mis-procurement when it is established that, at any time, the Employer, the contractor, the supplier, the consultant or its representatives have engaged in acts of corruption, fraud or anti-competitive practices during the contract procurement or performance without the Employer having taken appropriate action in due time satisfactory to the Agency to remedy the situation, including by failing to inform the Agency at the time they knew of such practices.

The Agency defines, for the purposes of this provision, the terms set forth below as follows:

(a) Corruption of a public officer means:

- the act of promising, offering or giving to a public officer, directly or indirectly, an undue advantage of any kind for himself or for another person or entity, for such public officer to act or refrain from acting in his official capacity; or
- the act by which a public officer solicits or accepts, directly or indirectly, an undue advantage of any kind for himself or for another person or entity, for such public officer to act or refrain from acting in his official capacity.

(b) A *“public officer”* shall be construed as meaning

- any person who holds a legislative, executive, administrative or judicial mandate (within the State of the Employer) regardless of whether that person was nominated or elected, regardless of the permanent or temporary, paid or unpaid nature of the position and regardless of the hierarchical level the person occupies;

- any other person who performs a public function, including for a State institution or a State-owned company, or who provides a public service;
  - any other person defined as a public officer by the national laws of the Employer.
- (c) Corruption of a private person means:
- the act of promising, offering or giving to any person other than a public officer, directly or indirectly, an undue advantage of any kind for himself or for another person or entity, for such person to perform or refrain from performing any act in breach of its legal, contractual or professional obligations; or
  - the act by which any person other than a public officer solicits or accepts, directly or indirectly, an undue advantage of any kind for himself or for another person or entity, for such person to perform or refrain from performing any act in breach of its legal, contractual or professional obligations.
- (d) Fraud means any dishonest conduct (act or omission), whether or not it constitutes a criminal offence, deliberately intended to deceive others, to intentionally conceal items, to violate or vitiate consent, to circumvent legal or regulatory requirements and/or to violate internal rules in order to obtain illegitimate profit.
- (e) Anti-competitive practices means:
- any concerted or implied practices which have as their object or effect the prevention, restriction or distortion of competition within a marketplace, especially where they (i) limit access to the marketplace or free exercise of competition by other undertakings, (ii) prevent free, competition-driven price determination by artificially causing price increases or decreases, (iii) restrict or control production, markets, investments or technical progress; or (iv) divide up market shares or sources of supply.
  - any abuse by one undertaking or a group of undertakings which hold a dominant position on an internal market or on a substantial part of it.
  - any practice whereby prices are quoted or set unreasonably low, the object of which is to eliminate an undertaking or any of its products from a market or to prevent it from entering the market.





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## PART 1A - TOOLKIT FOR E-TENDERING

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**E-TENDER SUBMISSION GUIDELINES**

1. The Bid should be submitted online at website <http://etenders.kerala.gov.in> in the relevant covers only, by the due date and time for Bid Submission, as specified in NIT. Late/delayed tenders submitted online after the due date and time for Bid Submission, for whatsoever reasons will not be considered. The Server Date & Time as appearing on the website. <http://etenders.kerala.gov.in> shall only be considered for the critical date and time of tenders. Offers sent through post, telegram, fax, telex, e-mail, courier will not be considered.
2. Partially completed/incomplete bids shall not be considered.
3. All communication regarding how to submit offers shall be done online through website <http://etenders.kerala.gov.in> OR [queries@kmrl.co.in](mailto:queries@kmrl.co.in)
4. Bidders shall be required to arrange all resources, including Digital Signature Certificates (DSC) and Internet Connections at their own cost, for participating in online tenders at <http://etenders.kerala.gov.in>. Bidders should have class III Digital signature certificate to be procured from any Registration Authorities (RA) under the Certifying agency of India. Details of RAs will be available on website [www.cca.gov.in](http://www.cca.gov.in) and for registration on e-tender portals, refer website <http://etenders.kerala.gov.in>. The registration should be in the name of the bidder, whereas DSC holder may be either the bidder himself or a duly authorized person. Bidders may contact e-procurement support desk of Kerala State IT mission over telephone at 0471-2577088/188/388 or via e-mail: [helpetender@gmail.com](mailto:helpetender@gmail.com) / [etendershelp@kerala.gov.in](mailto:etendershelp@kerala.gov.in) for assistance in this regard
5. Kochi Metro Rail Ltd (KMRL) shall not be responsible for any delays reasons whatsoever in receiving as well as submitting offers, including connectivity issues. Kochi Metro Rail Ltd (KMRL) shall not be responsible for any other delays in submitting any documents wherever applicable.
6. Kochi Metro Rail Ltd (KMRL) will not be responsible for the cost incurred in preparation and submission of bids including the cost of digital certificate, regardless of the conduct of outcome of the bidding process.

**7. Two cover system**

If two cover system is insisted Bidders are required to submit offer in Two covers, namely “Tender Fee/EMD/Technical “Cover I

And

“Financial” Cover-II

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**a. Cover -1 (Fee/EMD/Technical)**

- i. **Tender Fee:** To be paid at <https://etenders.kerala.gov.in>
- ii. EMD - Bank guarantee to be scanned and uploaded. Original BG to be submitted atleast one hour prior to the Technical Bid Opening date and time (in a sealed envelope mentioning name of work) in the Tender Box at the KMRL office, 4<sup>th</sup> Floor, JLN Stadium Metro Station, Kaloor, Kochi-682017
- iii. Power of Attorney (PoA) to be scanned and uploaded in the e-tender website. Original PoA to be submitted atleast one hour prior to the Technical Bid Opening date and time (in a sealed envelope mentioning name of work) in the Tender Box at the KMRL office, 4<sup>th</sup> Floor, JLN Stadium Metro Station, Kaloor, Kochi 682017
- iv. Bidders are requested to upload the scanned copies of the following details “online”
  - Refer Checklist (Section-IV Form-09) of Bidding Documents and Upload the documents accordingly.

**b. Cover II (Price Bid)**

- i. Bidders are requested to quote rates in the Finance cover (BOQ) only and uploaded.
- ii. Price bid to be uploaded only in e-tender website: <http://etenders.kerala.gov.in>

**PLEASE DO NOT QUOTE/MENTION RATES ANYWHERE ELSE IN THE TENDER OTHER THAN BOQ**

8. In case if bidder does not hold any document which need to be uploaded OR there is no need to upload the mentioned document please upload a scanned copy stating the reason for not uploading. Provisions for uploading cannot be left blank.
9. Please note that queries related to enquiry specifications, terms & conditions etc. should be submitted before the clarification end date/time specified in the TDS.
10. Tender opening (Technical Bid) will be done online at the time and dates specified in NIT.
11. The bidders are requested to go through the instruction to the bidders in the website <http://etenders.kerala.gov.in> The bidders who submit their bids for this tender after digitally signing using their Digital Signature Certificate (DSC), accept that they have clearly

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understood and agreed the terms and conditions in the website including the terms and conditions of this tender.

12. Kochi Metro Rail Ltd (KMRL) reserves the right to accept any or all offers or reject any or all offers without assigning any reason. Decision of Kochi Metro Rail Ltd (KMRL) in this regard shall be final and binding on the bidder.
13. Corrigendum / addendum, which form part of the tender document, shall be published in the Company website and e-tender website <http://etenders.kerala.gov.in> only and bidders are advised to check the websites regularly for the updates related to the tender while submitting the offer.
14. Further details, if required, can be had from DGM (Procurement) during office hours. The contact details is given below:

Mr. Bimal Biswas, Dy General Manager,

Email: [bimal.b@kmrl.co.in](mailto:bimal.b@kmrl.co.in); Kochi Metro Rail Ltd during working hours.

**DGM (Procurement)**

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**KOCHI METRO RAIL LTD  
(WATER METRO PROJECT)**



**REQUEST FOR PROPOSAL (RFP)  
FOR  
ELECTRIC VEHICLE SUPPLY EQUIPMENT (EVSE)  
(WATER METRO BOAT CHARGER)**

Under Financial Arrangement With  
German Financial Cooperation with India  
KOCHI WATER METRO PROJECT  
BMZ No. 2013 66657

**PART-2  
WORK REQUIREMENTS**

KOCHI METRO RAIL LIMITED  
(A Joint Venture of Govt. of India and Govt. of Kerala)  
4th floor, JLN Stadium Metro Station, Banerji Road, Kochi – 682017

**JANUARY 2021  
DOC NO: KMRL-WM-EL-002**

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## Section VII

### SCOPE OF WORKS & EMPLOYER'S REQUIREMENT

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## 1 INTRODUCTION

The supply, delivery, installation, testing, and commissioning of Electric Vehicle Supply Equipment (EVSE) including related Electrical Infrastructure at the terminals locations indicated, would be in a phased manner or individual terminal wise as specified in the document.

The design and construction must satisfy the requirements of this document and any other documents referenced or otherwise specified by the Employer, and in addition to the standards which would be reasonably expected as mentioned in Technical Specifications. All labour, equipment and material are to be provided by the contractor to complete the works as described in the tender.

The Contractor shall closely work with other contractors for all interface requirements. The Contractor shall construct and then remove from site any temporary works required and ensure that the site is clear of debris and used material, on completion of the works.

The Contractor is required to maintain a neat and tidy workplace at each location, throughout the construction period and ensure that all health and safety requirements are met including all safe access to and from the work site.

## 2 SITE INFORMATION

The project sites are located around Kochi. The meteorological data of the project sites can be obtained from the Climatological Handbook of India, 1981 to 2010 published by Indian Meteorology Department.

## 3 SCOPE OF WORKS & EMPLOYER’S REQUIREMENT

The scope of work of Contractor shall include comprehensive Design, Build, Supply, Delivery, Installation, Testing, Commissioning, statutory approvals, Warranty of Electric Vehicle Supply Equipment (EVSE) including related Electrical Infrastructure commencing from the outgoing terminal of the 11kV Switch Board.

Design, Build, supply, delivery, installation, testing and commissioning of all the items in between the 11kV switch Board outgoing terminal to charging socket which are required for charging the Boat as per the Employer requirements complete in all manner shall be in the scope of the Contractor.

The final price quoted by the bidder shall cover all the items including the items which are not specifically mentioned in the document but are required to make the charging system complete in all manner. No extra payment will be paid for any additional item or replacement of any item during the tenure of contract and warranty.

### 3.1 DESIGN WORKS

The Contractor shall conduct site visits in order to get familiar with the project area/Terminal locations, cable route planning, equipment location planning etc.

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The Contractor shall /examine the relevant drawings/Technical specification/layout and conduct site visit on various terminals and prepare the design basis document which includes design criteria's / drawings including the general arrangement drawing of EVSE and related Electrical infrastructures incorporated in the layout plan of the terminal shall be submitted by contractor for Employer's approval.

The Contractor shall design and provide all necessary specifications for the Works in accordance with the Works Requirements. The design detail, plan, drawing, specifications, calculations, notes and information required shall be provided in such sufficient formats, details, extent, size and scale and within such time as may be required to ensure effective execution of Works and/or as otherwise required by the Employer.

The good for construction (GFC) drawings shall be prepared for approval of the Employer. The Contractor shall submit the weight and dimension details of the EVSE, Transformer, LT Panel etc.

**3.1.1 DESIGN SCHEDULE**

The contractor shall submit the Design Basis Report with applicable codes and standards and list of assumption within 15 days from the date of NTP. Design basis report shall consist of design calculations such as Transformer sizing calculation, Cable sizing calculation (including voltage drops), Earthing calculation, Cable schedule etc.

The detailed design drawings shall be submitted within 15 days of receipt of approval of design basis report by Engineer/Employer. Detailed design drawing shall include but not limited to detailed Single Line Diagram, General arrangement (GA) drawings, Schematic Drawings and As-built drawings etc.

**3.2 ELECTRIC VEHICLE SUPPLY EQUIPMENT (EVSE)**

Design, engineering, testing at manufacturer's works, procurement including transportation to site and storage, quality assurance, packing, erection including performance testing, satisfactory commissioning of Fast charging DC Electric Vehicle Supply Equipment (EVSE) of capacity 150kW with CCS2 gun (200A continuous) including all fixtures, fittings and mounting accessories as per technical specification in the Boat terminals specified hereunder.

The EVSE shall be mounted on the specified location of the concrete Floating Pontoon as per the specifications and Employer satisfactions. It shall include all necessary power cabling and control cabling for alarm, tripping & indication, all internal cabling etc. The charger post profile and appearance shall be aesthetically superior.

The work shall be inclusive of all materials, lead, lift, necessary civil works including foundation & structural works, insurance etc. complete as per technical specification. The work includes the relevant site survey, submission of drawings, installation manuals, operation and maintenance manuals, special tools and tackles used for maintenance. EVSE shall be interoperable, vendor

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neutral and suitable for different battery chemistry. Provision for billing to be provided in EVSE. Remote monitoring facility to be provided in the EVSE including software and the interfacing equipment's

Supply of required software's, firmware's and updating the software/firmware for the entire duration of the contract period and warranty period.

### 3.2.1 EVSE QUANTITY & REQUIREMENT

Tentative Terminal wise EVSE quantity is given in the table below. The Contractor shall be responsible for design, supply and install, test and commission the EVSE and related infrastructure as per the scope of work, technical specification and relevant codes and standards.

Sl.No.	Location	No of Transformers	Charger Quantity*
1	Vytilla	2	4
2	High Court	4	8
3	Mattancherry	2	4
4	South Chittoor	1	2
5	Elamkunnappuzha	1	2
6	Edakochi	1	2
7	Ernakulam	1	2
	<b>Total</b>	<b>12</b>	<b>24</b>

The above listed location/terminals and quantity are tentative only. Actual location/terminals and quantity may vary and shall be shared while issuing Notice To Proceed

The Boat charger shall be designed and constructed in such a way that it shall be easily upgradable with future available technology.

The offered equipment shall be brand new with state of the art technology and a proven field track record. No prototype equipment shall be offered.

All necessary care shall be taken in selection, design, manufacture, testing and commissioning of the equipment for ensuring high system reliability.

Series-parallel combination of smaller devices to achieve specified rating shall not be acceptable.

**3.2.2 WARRANTY**

The contractor shall provide a replacement warranty of Seven (7)years for EVSE module. The product shall be replaced by the contractor within 72 hours on Employer notice on product failure or not performing as per the technical specification.

The Contractor shall provide a full set of all warranties for products of workmanship as may be required under the Contract in hardcopy (02 No. copies) and electronic original format and PDF format to the Engineer prior to submittal of the Contractor’s application for a Taking-over Certificate for the completed Section.

Any maintenance works, error handling, software upgradation or other server/software related issues shall be dealt with by the contractor for the whole contract warranty period of Seven years without any additional cost..

The Contractor shall make proper arrangements for stocking up sufficient materials at their store during the contract period for ensuring that the issue is attended within 24 hrs and shall be brought to working condition within a period not exceeding 72 hours. The Cost quoted EVSE module shall be inclusive of the Warranty,

**3.2.3 SPARES & TOOLS**

Two (2) sets of standard tool kit shall be supplied by the Contractor for dismantling/assembling, repair etc. suitable for the purpose of regular maintenance.

Contractor & their Vendors shall ensure availability of spare parts for the offered equipment for at least 10 years from the date of commissioning of system.

The contractor shall supply 2 sets of all equipment/components of EVSE module including the charging cable/gun as spare excluding its enclosures & frames. The quantity of the component considered in a set shall be equivalent to that of the module. These 2 sets of spares supplied shall be independent of the spares to be supplied during warranty period. The shelf life of spare supplied shall be five (5) years. The list of spare parts/components shall be submitted to the Employer in the below given format.

Sl.No.	Item Description	Quantity per EVSE (Nos.)	Total Quantity (Nos.)

The contractor shall supply the Rubber hand gloves set suitable for 11 KV in each charging station (Terminal) and supply, fixing of First aid box in the Electrical room near the transformer and floating pontoon near the EVSE module.

### 3.3 ELECTRICAL INFRASTRUCTURE

The scope of work of the contractor shall include but not limited to the design, supply, erection, testing, commissioning of EV charging infrastructure to supply power to EVSE covering all the components and associated accessories as specified. The detailed scope of the contractor with respect to the Electrical infrastructure shall be, but not limited to the following:

- 1) To study/examine the relevant drawings/layout of the various Boat terminals and prepare the design criteria for Electrical infrastructures for EVSE submitting and getting approval from Employer.
- 2) Preparation of the detailed design calculations for complete charging infrastructure of boats
- 3) Planning & tapping supply from the existing 11kV HT panel Board (provided by Employer) in the terminal Building and extending the power supply to the 11kV/415V Transformer.
- 4) Design, supply, laying, end termination, testing and commissioning of 11kV, XLPE, FRLS, armoured aluminium cable from HT Panel Board to Transformer as required as per technical specification.
- 5) Planning, Sizing, Design, supply, installation, testing and commissioning of 11kV/415V Step down transformer of required rating in the Input side of EVSE as per load requirement and technical specification. The minimum rating of the transformer shall be 500kVA, Dry type. Each transformer shall be designed to carry the load of 2 number of 150kW EVSE.
- 6) Design, supply and installation of Main LT panel Boards for Boat Chargers as per the technical specification. Each LT Panel Board shall have one incomer, two outgoing feeder for Boat charger (150kW each feeder) and one spare outgoing feeder.
- 7) Design, supply, laying and termination of LT, XLPE, FRLS, armoured, Aluminium power cable from transformer secondary to LT Panel Board of required runs and size.
- 8) Design, Supply and installation of required size & required runs of 1.1 kV grade PVC insulated FRLS sheathed, multicore bright annealed stranded copper conductor, unarmoured, flexible cable conforming to IS 694 (amended up to date) and IS:8130 (amended up to date) as per technical specification which shall run from the Boat charger LT Panel Board to EVSE module. The scope includes design, supply and laying of stainless-steel Rigid & flexible conduits, Flexible trays & accessories, cable guides to avoid the



tension on the cable where ever applicable of superior quality suitable for outdoor marine environment.

- 9) Design, supply, laying and termination of copper control cable for transformer/EVSE module protection and control, emergency stop/trip, indication etc. as per employer requirement.
- 10) Design supply and installation harmonic elimination device and to maintain the total harmonic distortion with in the limit specified by the utility company (i.e. KSEB) or statutory body.
- 11) Preparation of the detailed earthing design calculations & Design, supply and installation of earthing system and relevant earth conductors required for the Transformer (Neutral & Body earthing), LT Panel Board, EVSE charging system etc.
- 12) Wherever the terminal is located in water, locating earth pits is not possible structural earthing to be considered. The earth bus shall be connected to the reinforcement of the columns as described in the technical specification. The Boat charger system earth pit shall be connected to the existing plant earthing system by suitable size underground/floor earth strips.
- 13) Preparation of Cable Schedules (HT, LT & Control Cables) Design and construction of all associated works like cables trenches, foundations etc.
- 14) Design, supply, install & commission cable trays and conduits which are required for the HT power, LT Power, control and instrumentation cables.
- 15) Design, supply and installation of Emergency stop push button in the pontoon (near the each EVSE module) and in the LT panel board and making cable connection/wiring to trip the incoming supply in case of emergency.
- 16) Design, supply and installation of HDPE/Hume/Metal (GI)/RCC pipes with accessories which are required for laying the cables.
- 17) Supply and fixing anodised aluminium glass framed shock treatment chart. One each associated with Transformer, LT Panel Board and Charger.
- 18) Supply and fixing of First aid box in important location as per the Employer requirement & to meet the statutory needs.
- 19) Supply and installation of Fire Bucket and stand as per statutory requirement.
- 20) Supply of Rubber hand gloves set suitable for 11kV.
- 21) Supply and fixing of single line diagram, schematic diagrams etc. of A0 size on suitable Aluminium sheet including lamination etc. as required complete on wall/location specified by the Employer. One set to be provided for each transformer.

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- 22) Supply and installation suitable fire extinguisher for EVSE module and Transformer shall be in the scope of the contractor.
- 23) Supply and fixing of fire retardant/extinguishing electrical insulated synthetic mat of 2m x 1m x 2 mm for 3.3kV/11KV (as applicable) grade thick, +/- 10% confirming to BIS: DOC No. ET-02 (5440) meeting requirements of IS:15652:2006 (with up to date amendment), suitable for 3.3kV voltage and having minimum width of 1000mm +/- 20mm and including supply of required quantity of adhesive / compound in front of LT Panel Board, Transformer. Suitable mat to be provided for Charger as well if applicable.
- 24) Civil works associated with the erection of charger and transformer along with required HT/LT cable extension are within the scope of the bidder. Excavation, sand cushioning, providing protection for cable, route marker, refilling etc. including dewatering (if any) shall be the scope of the contractor. Grouting of equipment, fixing of cable trays, pipes with all necessary supports etc. are also in the scope of Contractor. No additional payment shall be paid.
- 25) The contractor shall provide the electrical danger boards on all the panel boards and other places wherever it is required.
- 26) The rates quoted for installation shall include the charges for painting the supports/welded portion/damaged portion as directed by Employer.
- 27) Closing of cable opening/cut-out in the panel boards, cable opening/cut-out in the wall, opening in the used and unused conduit shall be in the scope of contractor.
- 28) Any other ancillary works required as part of the EVSE as presented in the specifications and drawings.
- 29) The Contractor shall comply with all health and safety requirements of the Contract including statutory requirements, requirements of Kerala State Government Department, requirements stipulated, and any reasonable direction issued by the Employer's safety department or authorised personnel of the Employer from time to time. The Contractor shall document, implement and maintain a safety system complying with international standards acceptable to Engineer.
- 30) The Contractor shall be responsible for all quality management in the planning and execution of the Works. The quality management shall cover all stages of work such as setting out, selection of materials, testing at factory, selection of construction methods, selection of equipment and plant, deployment of personnel and supervisory staff, quality control testing, etc.

### 3.4 STATUTORY APPROVALS

The contractor shall obtain all necessary approvals for the electrical installation as required by the prevalent laws of the state of Kerala. All the, Application forms, schematics diagrams, layout plans Earthing protection schemes shall be approved by the Electrical Inspectorate Office (as applicable) prior to taking up the work. Approval for the installation from the Electrical Inspectorate after the installation shall also be the responsibility of the Contractor. Getting fire & safety approval, if any required from statutory authority is also the responsibility of the Contractor. All expenses towards the overall approval of the installation including the liasioning charges and statutory fees will be borne by the contractor.

Only the statutory fee will be reimbursed on producing the original bill.

### 3.5 EVSE & BATTERY INTERFACE WORKS

The design of the system requires detailed understanding of the input & output of the system. Information available with the Employer, to the extend feasible shall be provided. For any further details, the EVSE contractor shall co-ordinate with Boat builder and terminal contractor prior to selection/ finalization of equipment and installation.

EVSE shall be used to charge the Electric Ferry Boats having on-board LTO batteries. The on-board Batteries get charged from the shore based EVSE while boarding and alighting of passenger at the terminals is in progress.

The scope of works covers the supply of EVSE (CCS 2) and interface with the On-Board BMS system etc. as required. All the hardware and software shall be in the scope of the contractor.

The charger, charging gun/sockets etc. shall be compatible with the Boat system.

### 3.6 INSTALLATION, TESTING & COMMISSIONING

The Contractor shall be responsible for all construction & installation activities for the Works and shall follow the specifications provided within this Contract. The Contractor shall submit method statements for all the activities and get Employer's approval in advance. These method statements shall detail the Contractor's working methods and sequences, proposed plan, safety measures, Quality assurance procedures, testing procedures, material transport and delivery protocols, environmental monitoring plans and contingency plans in case of inclement weather.

Since the Works are on EPC contract basis, the items / components / approvals not specifically mentioned but are required for execution and proper functioning of the works shall be deemed to have been considered and included in the price bid submitted by the Contractor.

The Contractor shall:



- Provide necessary drawings and documents required by employer and obtain approval before taking up erection.
- Any modification in the equipment or installation that may be demanded by the inspecting authorities shall be carried out by the contractor at no additional cost to the employer.
- In accordance with the specific installation instruction as per the manufacturers drawings or as directed by the employer, the successful Bidder shall unload, assemble, erect, install, test, commission and hand over all the equipment included in this contract.
- Erection materials including all consumables, tools, testing instruments or any other equipment required for successful commissioning shall be arranged by the successful Bidder in a timely manner.
- All equipment and instruments, indoor and outdoor, shall be marked with relevant information as instructed by the employer and provided with danger boards before commissioning.
- All Power equipment shall be handled and erected as per the relevant codes of practice and manufacturer's drawings and instruction manuals.
- The Contractor shall obtain the temporary Electrical connection for construction purposes and the same has to be dismantled off the premises after completion of erection of plant (if any).
- Establish store facility for keeping the Charger in the safe custody after delivery and up to installation.
- Monitor environment and report to Employer during the project execution as per the tender specifications
- Obtain all necessary work permits and security permits prior to commencement of works.
- Establish site office and other facilities for the Employer as per the tender specifications. All the Tools and Plants, including Special T&P, testing and measuring instruments required for the implementation of the project is to be arranged by the bidder and quoted price shall be inclusive of the same.
- Clear the work areas provided to the contractor at the end of his works, to enable their use for the project.
- Restoration of any demolished permanent/temporary structures after completion of the works and before demobilization.

### 3.7 TRAINING

The contractor shall provide training/ refresher course (seven working days) to the project/operations team for carrying out operations & maintenance, and addressing common issues related to



operation of charging stations. The contractor shall supply the operations & maintenance manuals, drawings, training materials etc.

Contractor shall impart required class room training of minimum five days' period regarding operation & maintenance of EV charging station to designated engineers of the employer at the Employer premises. In addition to the class room training, the contractor shall conduct two days on site practical training for complete dismantling, assembling, troubleshooting/repairing and operation of the EVSE modules/EV charging stations. The total training duration shall not be less than 60 hours. The costs involved in organizing and conducting such trainings including the travel & stay of the trainer shall be borne by the contractor.

**3.8 INSURANCE**

The goods supplied under the contract shall be fully insured against loss or damage incidental to manufacture or acquisition, transportation, storage, delivery. For delivery of goods at site, the insurance shall be obtained by the bidder, for an amount not less than the Contract Price of the goods from "warehouse to warehouse" (final destinations) on "All Risks" basis including War risks and strikes. This shall include insurance during the entire contract period against natural calamities.

Bidder is required under the contract to transport the Goods to place of destination defined as Site and make necessary arrangements for storage of the material till the same are installed at various locations. Transport to such place of destination including insurance shall be arranged by the successful bidder, and the related cost shall be included in the Contract Price.

**3.9 DRAWINGS, DATA, DOCUMENTS & DELIVERABLES**

The bidder shall furnish following documents/ information along with the offer.

1. Bidders must submit design details, including details of the chargers, transformers, cables, scheme to effectively power the chargers, system protection schemes, integration and power evacuation details with existing power system, with appropriate diagram and drawings; The drawings must be submitted along with detailed foundation/structural design and material selected as per the relevant standards;
2. General description of equipment offered specifying the important features, make, technical parameters, materials of construction, etc. to enable the employer to have proper understanding of the equipment offered and its operation.
3. Technical literature, catalogue and publications.
4. Layout of Complete Plant Installation showing location of all major sub-systems.
5. Single line diagram for charging system.
6. Typical general arrangement and foundation details.
7. Technical particulars as listed in this specification.

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8. Type test certificates of all major equipment like EVSE, transformers, applicable modules etc.

The successful bidder shall submit all the appropriate diagrams and drawings to the Employer for approval. Also, specifications of major items such as EVSE, transformers, distribution panel board etc. shall be submitted to the Employer for approval.

The contractor shall submit deliverables as listed below and may include additional documents as deemed necessary. The following documents shall comprise general submissions.

- Plans and Schedules consist of Project Specific HSE plan and risk response plan, Project specific QA/QC plan, Project Master Schedule in MS Project.
- Project Controls consists of Minutes of meetings, document updates etc.

The following are the construction deliverables.

- Obtain relevant permits and approvals for construction
- Submission of Method statements for complete work
- Mobilization of Contractor’s staff, equipment and plant;
- Installation of Boat Chargers and related infrastructures.
- Remove the temporary facilities after construction;
- Demobilization of Contractor’s staff, equipment and plant.
- Factory Testing, Field Testing & commissioning, Handing over

### 3.10 DEFECT LIABILITY

The defect notification period shall be 24 months as specified in the Contract Data of the particular condition of contract (PCC, Section-X, Part-A, Contract Data, SI.No.5). The contractor is liable to do the corrective maintenance of overall EVSE including charging gun/accessories and related infrastructure during the defect notification period. The faulty or defective or underperforming materials/items to be replaced within 72 hour of notice from the Employer.

#### 3.10.1 OPTIONAL QUANTITY:

In addition to the quantity specified in the BOQ of the tender the Employer may optionally procure additional EVSE Modules up to 50% of original quantity along with its related infrastructure with same scope and technical specification for other locations of water metro project without any increase in unit cost.

The option may be exercised, by the employer on completion of 50% of the tender works.



## 4 ADMINISTRATIVE REQUIREMENTS

### 4.1 Project Management and Coordination

#### 4.1.1 Project Coordination Meetings for Interfacing Contracts

The Contractor's Representative shall attend regular meetings as required by the Employer/ Engineer to coordinate and manage the interface between the Works under this Contract, works under other systems, Terminal contracts. The frequency of such meetings may vary depending on the nature of the interface and associated Works; however, the Contractor shall anticipate that meetings will be held at least fortnightly throughout the duration of the Contract.

The Contractor shall be responsible for establishing and maintaining direct lines of communication, as coordinated with the Employer/Engineer, with the relevant parties for the day to day coordination of his activities.

#### 4.1.2 Weekly Meetings

The Contractor's Representative shall attend Weekly Meetings to be chaired by the Engineer to discuss the progress of the Works and other relevant matters. The Weekly Meeting agenda will typically include, but not limited to:

- (a) Adoption of Previous Minutes.
- (b) Outstanding Matters.
- (c) Health and Safety.
- (d) Quality Assurance.
- (e) Interface Coordination with adjacent works.
- (f) Progress of the Works.
- (g) Programme Milestones, Achievements and Slips.
- (h) Resources (i.e. Plant and Equipment, etc.)
- (i) Contractual Matters.
- (j) Progress Payment Claims and Payments.
- (k) Environment compliance issues.
- (l) Other points as necessary.

When required by the Employer / Engineer, separate meetings covering occupational health and safety; environmental management, quality etc. shall be held independently of the weekly meetings with the Contractor's specialist personnel in attendance and other contractor's safety representatives also in attendance when, and if, deemed necessary, by the Engineer or the Engineer's Safety representative. Any unresolved issues arising from these supplementary meetings can be included

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and form part of the weekly site meetings. Joint (Contractor and Engineer) site quality walks and safety walks shall be carried out at regular intervals.

Daily and informal routine discussions shall also be held each day, as/when necessary, between the Engineer's and the Contractor's representatives.

**4.1.3 Contractor's Project Management Plan**

The Contractor shall submit, within fifteen (15) days from the issue of Letter of Award, for the Engineer's review and acceptance, a detailed Contractor's Project Management Plan (PMP) that provides specific details as to the execution process, methods and procedures which the Contractor will adopt for the project.

The PMP shall include methodology, policies, organisation and resources to manage scope, change, schedule/programme, security, interface, budget and cost, quality, human resources, communication, risk, procurement, environment, labour management plan, taking over plan, workman's accommodation/villages, etc. Detailed requirements for some of these plans are included in this specification.

The PMP shall reflect the holistic thinking process of the Contractor for the successful completion of Works from the commencement until completion

**4.1.4 Contractor's Project Organization and Staffing**

The Contractor shall employ on this Project, a competent team of managers, Engineers, technical staff, etc. so as to complete the Works satisfactorily as per the various requirements of the Contract. The Contractor shall submit his proposed staffing plan and organization to the Employer for review and approval within fifteen (15) days from the issue of Letter of Award, which shall include:

- (a) The Contractor's proposed Staff Organization in chart form showing the names of his proposed staff for each position;
- (b) CVs of the Contractor's proposed Key Staff with adequate details and copies of documentary proof for the individual's qualifications and experience (with contract titles, position(s) held) and dates to substantiate that he/she is competent for undertaking the proposed position;
- (c) The scope of responsibilities of each staff member and the reporting lines between individual staff;
- (d) The documents that each key personnel staff is authorized to sign on behalf of the Contractor.

The Staff Organization shall cover the Contractor's key staff, as well as other working-level staff, with a narrative of the authorities and responsibilities of each staff member in execution of the

Works, whether on site or in office locations, or in deciding technical details of the Contractor's submittals.

Each member in the Contractor's Staffing Proposal, including the Key Staff, shall be allocated to this Contract on a full-time basis on site until the activities that he is responsible for, have already been completed. Should it be necessary to replace Key Staff, before the activities he is responsible for have been completed, the Contractor shall submit the CV of the proposed substitute to obtain the Notice of No Objection from the Employer, at least 30 days before the proposed change. The substitute shall not be less qualified or experienced than the person he is replacing.

**4.1.5 Project Controls Execution**

The Contractor shall employ the appropriate level of suitably qualified and experienced personnel, having competencies in preparing integrated project programme, cost, resource allocation, and establishment of a baseline plan for monitoring and performance measurement.

The Contractor project controls will be executed on the Employer's programmes through integration of the following:

- (a) Time Management;
- (b) Cost Management;
- (c) Resource Management;
- (d) Change Management;
- (e) Performance Measurement;
- (f) Reporting.

The Contractor's project controls must include work breakdown structures, organizational breakdown structures, milestones, cost and programme information, risk, scope and deliverables in sufficient detail to allow a schedule baseline to be set at a level that facilitates visibility of performance and ease of reporting.

The Contractor shall develop the Contract Price into the budget baseline and define the resources (labour, plant/equipment, material, subcontract and overhead) required to deliver the contract scope at the lowest level of Work Breakdown Structure (WBS). Individual WBS elements are broken down to align with the integrated schedule activities and each activity is broken down and coded by cost elements.

The Contractor is required to ensure that schedule and execution risks are supported with mitigation measures. The Contractor shall establish and use quantifiable performance measurement tools and Key Performance Indicators (KPI) for each stage of the Contractor's project management process. KPIs are to be reported on a weekly and monthly basis in accordance with the Engineer's

requirement and must address all foreseeable contract risks and give early warning of project performance.

#### 4.1.6 Contractors Emergency Contact Details

Prior to commencement of construction Works, the Contractor shall provide to the Engineer, and all other relevant government agencies, the 24-hour contact telephone number of two (02) persons with authority over the Works during the construction period. The persons shall have authority to take immediate action to shut down any activity, or to affect any emergency measures as directed by the Engineer or any other relevant government agencies.

#### 4.2 Detailed Execution Sequence and Methodology

The Contractor shall be responsible for scheduling, actions, personnel, materials and all other aspects of the works necessary to achieve completion of the whole of the Works within the Time for Completion and subject to the provisions contained in this contract.

Along with the submission of the detailed programme (in accordance with Clause 8.3 of the Conditions of Contract), the Contractor shall submit to the Engineer for approval, the Detailed Execution Sequence and Methodology and the overall schedule from contract start to completion of all works.

The Detailed programme and Methodology shall be consistent with the overall sequencing of the execution methodology submitted in the Contractor's Tender and shall provide additional details of the Contractor's proposed method and sequence of works. The Works shall be planned such that proper site safety, drainage and free flow of traffic is maintained at all times and the Contractors works sequence and scheduling shall conform with any additional sequence or phasing requirements and shall include due allowance for all inspection, testing and document review requirements nominated on the Drawings and/or elsewhere in this Specification.

#### 4.3 Contract Programme

- (a) The Contractor shall submit a Detailed Time Programme (DTP) to the Engineer for acceptance as required in the Conditions of Contract;
- (b) The DTP prepared by the Contractor is to have a WBS based on information provided by the Engineer. The logic and activity sequence of the DTP shall also follow the Critical Path Method (CPM) standard. The WBS shall be used for shop drawings, procurement, subcontractors, and construction, inspection, commissioning and handover operations;
- (c) The DTP shall identify submission dates of Construction Work Method Statements (CWMS), various interfaces and other key deliverables as identified in the specifications;
- (d) The Contractor shall allow for Seven to Twenty-One days (depending on the type of submittal) review time by the Engineer of his submittals within the DTP;

- (e) The DTP shall at all times accurately reflect the Contractor's current plan for the work and shall be the primary tool utilized by the Contractor to document the progress of the works and to communicate the timely completion of the Works;
- (f) The Contractor's monthly progress reports (Monthly Reports) and applications for Interim Payment Certificates must incorporate an updated DTP indicating work activities and status in accordance with the requirements of this General Specification.
- (g) The Contractor shall update the programme throughout the contract period to reflect the actual progress of the works on site.
- (h) The Contractor may from time to time submit a revised contract programme with the purpose of re-organisation of the execution of the works so as to enable the Contractor to complete the works in the shortest practicable time. The revised contract programme must first be approved by the Engineer and if and when such approval in writing is given, the Contractor shall comply with the revised contract programme in accordance with the requirements.
- (i) The acceptance or approval by the Engineer of a contract programme or revision thereof shall not relieve the Contractor of its obligation to complete the works within the contracted time for completion and will not give rise to a variation under the contract.

#### 4.4 Weekly Progress Reports

The Contractor shall submit at the end of each week to the Engineer a Weekly Progress Report summarizing significant progress or problems encountered during the preceding week in respect to all parts of the works under the contract.

The Contractor shall finalise the format and content of the Weekly Progress Reports with the Engineer prior to the commencement of works on site.

The Weekly Progress Report shall include a copy of the current approved contact programme outlining progress to date for the major items of the Works, including a statement of the Contractor's programme for the following week and without restricting the generality of the foregoing, shall include reasoned and detailed comments in respect to:

- (a) Activities or items completed during the week, including dates of completion;
- (b) Activities or items scheduled for completion during the week but not completed (showing details of intended remedial action and comments as to likely effects on the works programme);
- (c) Changes to the critical path;
- (d) Activities or items re-scheduled or re-estimated by the Contractor;



- (e) Additional or deleted activities or items;
- (f) Anticipated slippage or problems and proposed mitigation measures;
  - (i) Future up-to-date target dates for the finalisation of the items
  - (ii) Changes to the work programme duration;
- (g) Planned percent complete;
- (h) Actual percent complete;
- (i) Date variance and percent variance.

The Weekly Progress Report shall also include but not limited to:

- (i) Plans and Schedules consist of Project Specific HSE plan and risk response plan, Project specific QA/QC plan, Project Master Schedule in MS Project.
- (ii) Project Controls consists of Minutes of meetings, document updates etc
- (iii) Permits and Approvals consist of EMP, permits, Construction permits and any other permits as deemed required.

#### 4.5 Monthly Progress Reports

In addition to the Weekly Progress Reports, the Contractor shall submit each month within seven (7) days of the last day of the period or the agreed cut-off date with the Engineer, an overall Monthly Progress Report summarizing the contents of the submitted Weekly Progress Reports for that month in respect to all parts of the Works under the contract. The submission of the Monthly Progress Report shall be subject to the requirements of Clause 4.21 of the Conditions of Contract and the additional requirements of this Specification. The report shall indicate the progress and financial status of the works of the previous month. The report shall accurately estimate the work completed on each activity, including design, procurement, Engineering and construction activities on the approved DTP.

The Contractor shall finalise the format and content of the Monthly Progress Reports with the Engineer prior to the commencement of the Works on site. The Monthly Progress Report shall also include but not limited to:

- (a) Executive Summary of previous month's events including a clear summary statement of the current progress position;
- (b) Describe DTP current critical path;



- (c) Total work progress as at the end of the previous month with progress chart showing progress achieved as a percentage against planned progress;
- (d) State existing status, rate of progress, estimated time of completion and cause of any delay (if any);
- (e) Description of work accomplished since submission of previous progress Programme;
- (f) Compare actual work status against the Contractor's Baseline Programme submitted in electronic format, indicating:
  - (i) Activity Description;
  - (ii) Original Duration;
  - (iii) Remaining Duration;
  - (iv) Planned Percent Complete;
  - (v) Target Early Start;
  - (vi) Target Early Finish;
  - (vii) Actual Percent Complete;
  - (viii) Date Variance;
  - (ix) Percent Variance.
- (g) Information regarding any design changes;
- (h) Information regarding any variations;
- (i) Details of inspections and approvals required to proceed with work;
- (j) Information required from the Employer;
- (k) Environmental monitoring reporting, including separate waste management reporting;
- (l) Value of work done;
- (m) Actual and anticipated cash flow;
- (n) Changes or additions to Contractors supervisory personnel since the preceding progress report;
- (o) Causes of any delays;

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- (p) Identify anticipated problems or changes and present plan to deal with them so as to minimize or prevent delays;
- (q) Status of equipment and material deliveries;
- (r) Request for Information (RFI) status;
- (s) Submittals summary and status:
  - (i) Instructions summary and status;
  - (ii) Defects summary and status;
  - (iii) Schedule of warranties and guarantees;
  - (iv) Schedule of insurances and insurance claims;
  - (v) Subcontracts awarded in the previous month.

Updates and revisions to required programme and reports shall not modify or limit in any way, the Contractor's obligations to meet the Time for Completion.

Copies of the site progress photos for the month shall be provided in a separate appendix.

## 5 REGULATORY REQUIREMENTS

### 5.1 Permits, Permissions and Statutory Approvals

The Contractor shall comply with all statutory obligations and regulations of relevant Authority, statutory authorities or services or utility providers, or any other relevant body or organisation with authority or jurisdiction in India relating to the execution of the Works.

Where any conflict arises between the requirements of the various relevant authorities, the more stringent provision shall apply subject to the agreement of the relevant authorities.

The Contractor shall allow sufficient time in his programme for the issue of any statutory notices by the relevant Authorities which may be required prior to the commencement of the relevant Works. The Contractor shall provide the Engineer with documents of evidence that the relevant Authorities have been notified of the proposed Works in accordance with relevant regulations and ordinances.

The Contractor shall give notice to the relevant Authorities at least one month or as appropriate to get the necessary approvals in advance of commencement of any new activity and shall keep the relevant Authorities regularly informed of the Works. The Contractor shall liaise with the relevant Authorities to give all information on working areas, types of plant and durations of activities, deemed necessary by the Authorities. The Contractor shall if required, also advice the Authorities on completion of each and every separate activity. In particular, at least one months' notice shall be given to the Authorities for the removal or relocation of any navigation affected by the Works.



The Contractor shall identify the permissions and submissions that are required by the regulatory Authorities for the performance of the Works. Where required, the Contractor shall prepare and submit to the relevant Authorities for their endorsement details of the proposed construction sequence and methods to be employed on the Works and an action plan as required in the Contract. No construction work shall be commenced prior to the endorsement and approval of the relevant submissions by Authorities. In this respect the Contractor shall note that the Authorities' requirements may include the submission of the following for their approval at least one month in advance of the commencement date of the Works;

- (a) list of all personnel who would be working at site;
- (b) the name of the person(s) in charge of the Works who can be contacted by the relevant Authorities on a 24-hour basis and means and procedures to contact them;
- (c) the proposed schedule of all Works carried out under the Contract indicating different types of operations, their number, duration, space requirements and phasing;
- (d) Other as may be required.

Health Safety & Environment permits and all related issues are the responsibility of the Contractor. All correspondence between the Contractor and relevant Authorities including all submissions shall be copied to the Engineer. All environmental permitting issues will be dealt through Engineer/Employer.

## 6 TEMPORARY FACILITIES AND CONTROLS

### 6.1 Contractors Site Establishment Plan

The Contractor shall submit his own Site Establishment Plan to the Engineer for approval at least seven (07) days prior to the commencement of any site establishment, temporary or any other Works under the Contract, if he proposes to undertake all scope of works.

This submission shall include confirmation of the Contractor's intended date for the commencement of site establishment and any other site work.

The Contractors Site Establishment Plan shall include details of the proposed facilities including but not limited to the following items:

- (a) General layout of site fencing, site access points, stacking and storage of construction material, other security arrangements;
- (b) General layout of construction facilities including the Contractors field offices, sheds, sanitary and first aid facilities, Field Laboratory and Engineers Office;
- (c) Details of arrangements for emergency access/egress and evacuation points;

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- (d) General layout of work areas, any on site batching plants, casting yards, fabrication or coating workshops if contractor's work plan defines onshore casting/fabrication;
- (e) All other details relating to the site establishment as required under the Contract or by any relevant authority;
- (f) Dust protection measures from adjacent bulk stockpiles of materials

The approval of the Site Establishment Plan by the Engineer shall constitute a Hold Point on the commencement of site establishment, temporary or any other Works under the Contract.

Any request by the Contractor to change the agreed proposals shall be subject to the agreement of the Engineer.

## 6.2 Temporary Utilities

It is the responsibility of the Contractor to arrange and obtain permission from the relevant Authorities for the installation, connection and disconnection of temporary services and utilities such as power, water, and any other services the Contractor deems necessary to execute the Works. The Contractor shall be responsible for all costs associated with the supply of these services.

The Contractor shall install, maintain and pay for such services like water and power and any other facility/service required for the construction of Works. The Contractor shall lay cables/pipelines from nearest connection points up to the Site at his own cost. In case of the realignment of utilities due to the construction constraints the same shall be carried out by the Contractor at this own cost and nothing extra shall be payable on this account

All temporary services shall be removed and made good at the completion of the Works.

## 6.3 Construction Facilities

### 6.3.1 Contractor's Site Compound

The entire Contractor's Site Compound including all Contractors site offices, sanitary and first aid facilities, labour camp (if any), car parking, field laboratory, security facilities, Engineer's Field Office and the like shall be confined within the area designated for the Contractor's site establishment as instructed by the Employer.

The Contractor shall take all necessary measures to reduce dust from adjacent areas. Special precautions are to be taken during the monsoon period taking into account prevailing wind directions.

### 6.3.2 Assistance to the Engineer/Employer

The Contractor shall allow for the provision of labourers to assist the Engineer/Employer, if and when required throughout the Works. The Contractor shall provide boat / vehicle transport &

Personal Protective equipment (PPE) as may be required by the Engineer for inspection of his works.

#### 6.4 Contractor’s Site Access Management Plan

The Contractor shall submit his Site Access Management Plan to the Engineer for approval at least 07 days prior to the commencement of any site establishment, temporary or any other Works under the Contract. The Contractor shall follow the overall project Site Management Plan. Contractor’s Site Access Management Plan will be reviewed and approved by the Engineer, and Employer.

The Contractors Site Access Management Plan shall include figures or drawings and accompanying notes detailing the proposed site traffic management Works (subject to the further requirements of this section of the Specification) including but not limited to the following items;

- (a) General methodology and route for accessing Site
- (b) Arrangement and approximate timing for the delivery of materials and equipment throughout the course of the Works as well as any special arrangements or controls for mobilisation of oversize plant or delivery of oversize equipment;
- (c) Labour timing;
- (d) Proposed internal construction traffic controls (signage, line-marking, signals etc.) both for internal site roads and at interfaces with existing external roads;
- (e) Any proposed temporary traffic controls for existing external roads that may be necessary from time to time to facilitate delivery of materials or equipment to site or any other Works on such roads;
- (f) Arrangement for marine access to marine construction work and Site Portions including navigational arrangement, temporary aids to navigation, anchoring and mooring arrangement.

The Contractor shall prepare the Site Access Management Plan with a view to minimizing interference with existing traffic (both landside road traffic and marine traffic and shipping) to and from the existing facilities in the vicinity of the site. All vehicles or marine craft using the existing public roads waters external to the site shall comply with the prevailing local and port rules and regulations as well as the requirements of any other relevant authorities.

The Site Access Management Plan shall identify such facilities as are necessary to ensure that construction dust and debris is not carried onto the existing port roads, thoroughfares or adjoining properties by vehicles leaving the site. Any damage or disturbance caused by vehicles leaving the site shall be rectified immediately by the Contractor to the satisfaction of the Engineer/Employer.

The approval of the Site Access Management Plan by the Engineer/Employer shall constitute a Hold Point on the commencement of site establishment, temporary or any other site Works under the Contract as well as mobilization of plant and delivery of any materials or equipment to the site.

Any request by the Contractor to change the agreed proposals shall be subject to the agreement of the Engineer/Employer.

### 6.5 Temporary Barriers and Enclosures

The Contractor shall maintain fencing, employ watchmen and any other measures necessary so as to maintain the security of the Field Office, Work Site, his labour camps and all other facilities related with this contract, at all times pursuant to the requirements of Clause 4.22 of the Conditions of Contract.

Temporary fencing shall be installed and maintained by the Contractor for the security of plant, equipment and materials used in connection with the Works.

The temporary fence shall be completed as soon as practical following initial Possession of the Site and removed immediately prior to issue of the Taking-Over Certificate for the Works (or part thereof).

It remains the responsibility of the Contractor to establish the type of fencing that the Contractor requires to separate the construction area from public areas, other sites and port operational areas and to provide the level of site security/safety the Contractor deems necessary for the site and work areas.

Construction work shall be confined to within the fenced construction site area except with the written approval of the Engineer/Employer.

### 6.6 Project Information Sign Board

The Contractor shall erect two signboards at prominent locations on the Site to identify the site to occasional visitors. The size, layout and location of the signboards shall be agreed with the Engineer.

The Contractor shall not erect within or near the site or elsewhere on the Employer's land any sign or notice board without prior approval, except safety signs.

The Contractor shall dismantle, remove and dispose of all such signs off site upon issue of the Taking-Over Certificate for the Works.

## 7 PRODUCT/ MATERIALS REQUIREMENTS

### 7.1 Common Requirements

#### 7.1.1 General

Materials to be used in the work shall conform to the specifications mentioned on the drawings, the requirements laid down in this section and specifications for relevant items of work covered under these specifications.

Only new products, materials or equipment shall be supplied for use in the permanent Works. Pre-owned or pre-used products, materials or equipment shall not be supplied unless specifically accepted in writing by the Engineer.

Products, materials and equipment to be incorporated in the permanent Works shall not be used in any temporary Works prior to their incorporation into the permanent Works unless specifically accepted in writing by the Engineer.

If any material, not covered in these specifications, is required to be used in the work, it shall conform to relevant Indian Standards, if there are any, or to the requirements specified by the Engineer.

#### 7.1.2 Approval of Manufacturers and Suppliers

The Contractor shall submit details of the proposed source, manufacturer or supplier of all products, materials or equipment to be used in the permanent Works to the Engineer for approval.

- (a) The details to be submitted by the contractor shall include but not be limited to the following;
- (b) Name of product, material or equipment to which the submission relates including reference to relevant sections of the Contract documents;
- (c) Name of proposed source, manufacturer or supplier; Certificates, test results or any other information or evidence demonstrating that the proposed product, material or equipment confirms to the requirements of the Contract;
- (d) Declaration that the product, material or equipment shall be supplied in accordance with the requirements of the Contract including all specified markings and certificates;
- (e) Instructions or directions for the handling, storage or usage of the product, material or equipment from the source, manufacturer or supplier;
- (f) Any other relevant technical details as may be required under the Contract or by the Engineer.

The Contractor shall submit such details to the Engineer for approval at least 14 days prior to placing orders for the subject product, materials or equipment. The approval of the submission by





the Engineer shall constitute a Hold Point on the delivery of the subject product, materials or equipment to site. Irrespective of any such approval, the Contractor shall remain responsible for the quality and conformance of the subject product, material or equipment to the requirements of the Contract.

Once approved, sources shall not be changed without the written approval of the Engineer. If it is found after trial that sources of supply previously approved do not produce uniform and satisfactory products, or if the product from any other source proves unacceptable at any time, the Contractor shall furnish acceptable material from other sources at his own expense.

**7.1.3 Samples**

Where required by the Engineer, the Contractor shall at his own expense, submit to the Engineer for approval, samples of any of the materials and components to be used in the Contract Works. The quality of materials and components to be used in the Works shall not be inferior to the approved samples.

**7.1.4 Alternatives or Equivalents**

In all cases where the name of a particular type or make of material, product, equipment or item is referred to in the Contract, this indicates the minimum acceptable standard. The Contractor may offer equipment or materials other than those specified and in all such cases the Contractor’s offer shall be of at least equal quality. The same shall apply where the words “or approved equivalent” are used.

In these instances, the Contractor shall submit to the Engineer for approval a statement detailing the alternative material or equipment and shall include full technical descriptions, drawings and specifications and shall provide such further information as is required to demonstrate to the Engineer that the alternatives are equivalent in every way to those specified.

Acceptance of the Contractors offered alternatives shall be subject to the acceptance and approval of the Engineer and the Employer who shall not be bound to accept any such offer.

**7.1.5 Delivery, Storage and Handling Requirements**

No products, materials or equipment shall be delivered to site until the Contractor has established all traffic and environmental controls on site and has adequate facilities on site for unloading and storage of the products, material and equipment prior to their incorporation into the Works.

All products, materials and equipment delivered to site shall be handled and stored so as to prevent damage or deterioration prior to their incorporation into the permanent Works. All stockpiles and storage stacks shall be maintained by the Contractor in a safe state with sufficient working space provided to permit safe access by the Engineer for inspection and checking of the delivered products, materials and equipment.

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All proprietary products, materials and equipment used on the Works shall be handled, stored, used, fixed or applied strictly in accordance with the manufacturer's instructions and to the satisfaction of the Engineer. The Contractor shall obtain the manufacturer's instructions in this regard at the time of ordering and shall submit to the Engineer along with his submission of the proposed source.

## 7.2 Tests and Standard of Acceptance

### 7.2.1 General

All materials, even though stored in an approved manner shall be subjected to an acceptance test prior to their immediate use.

Independent testing of cement for every consignment shall be done by the Contractor at site in the laboratory approved by the Engineer before use. Any cement with lower quality than those shown in manufacturer's certificate shall be debarred from use. In case of imported cement, the same series of tests shall be carried out before acceptance.

### 7.2.2 Testing and Approval of Material

The Contractor shall furnish test certificates from the manufacturer/supplier of materials along with each batch of material(s) delivered to site.

The Contractor shall be responsible or testing of all materials, finished products used in the construction as per requirements of conditions of contract and the relevant specifications. The testing of all the materials shall be carried out by the Engineer or his representative for whom the Contractor shall make all the necessary arrangements and bear the entire cost.

Tests which cannot be carried out in the field laboratory have to be got done at the Contractor's expense at any recognised laboratory/testing establishments in India or abroad as approved by the Engineer. All necessary cost for witnessing the test by Engineer's representative shall have to be borne by the Contractor.

### 7.2.3 Sampling of Materials

Samples provided to the Engineer or his representative for their retention are to be in labelled boxes suitable for storage.

Samples required for approval and testing must be supplied well in advance at least 48 hours or minimum period required for carrying out relevant tests to allow for testing and approval. Delay to works arising from the late submission of samples will not be acceptable as a reason for delay in the completion of the works.

If materials are brought from abroad, the cost of sampling/testing whether in India or abroad shall have to be borne by the Contractor.

### 7.2.4 Rejection of Materials not conforming to the Specifications

Any stack or batch of material(s) of which sample(s) does not conform to the prescribed tests and quality shall be rejected by the Engineer, or his representative, and such materials shall be removed from site by the Contractor at his own cost. Such rejected materials shall not be made acceptable by any modifications.

### 7.2.5 Testing and Approval of Plant and Equipment

All plant and equipment used for preparing, testing and production of materials for incorporation into the permanent works shall be in accordance with manufacturer's specifications and shall be got approved by the Engineer before use.

## 8 PROJECT EXECUTION

### 8.1 Execution

#### 8.1.1 General

In every case, the Works shall be carried out to the satisfaction of the Engineer and conform to the location, lines, dimensions, grades and cross-sections shown on the drawings or as indicated by the Engineer. The quality of materials, processing of materials as may be needed at the site, salient features of the construction work and quality of finished work shall comply with the requirements set forth in succeeding sections of this Specification.

#### 8.1.2 Radio Communications

Any radio frequencies proposed for use by the Contractor for site communications shall be subject to the approval of Employer or relevant Authority. The Contractor shall be responsible for arranging all permits and licences required for the operation of radio equipment throughout the Works.

#### 8.1.3 Construction Plant and Equipment

In addition to the general conditions indicated in the Contract Documents, the following conditions regarding use of equipment in executing the works shall be satisfied:

- (a) The Contractor shall be required to give a trial run of the equipment for establishing their capability to achieve the laid down Specifications and tolerances to the satisfaction of the Engineer before commencement of the Works;
- (b) All equipment provided shall be of proven efficiency and shall be operated and maintained at all times in a manner acceptable to the Engineer;
- (c) All the plant/equipment to be deployed on the Works shall be approved by the Engineer for ensuring their fitness and efficiency before commencement of work;
- (d) Any material or equipment not meeting the approval of the Engineer shall be removed from the site forthwith;

(e) No equipment will be removed from site without permission of the Engineer; and The Contractor shall also make available the equipment for site quality control work as directed by the Engineer;

(f) All equipment shall comply with the environmental requirements set out in this document.

## 8.2 Cranes and Lifting Equipment

All cranes, lifting equipment and winches shall comply with Indian and Local Government requirements and third party surveyor requirements, for example Lloyds, B.V., DNV, ABS, and Indian Safety Authority or similar approved.

Test certificates, maintenance records and the like for all cranes, wires, slings and winches shall be available for inspection by the Engineer and for third party audit. Slings for which test certificates are not available shall not be used and will be removed from site prior to the commencement of the Works.

## 8.3 Repair Methods

The Contractor shall submit to the Engineer for approval details of all proposed repair methods to be employed as may be necessary to rectify any minor defects or incidental damage in elements of the permanent Works.

Details shall include but not be limited to information on the type and manufacturer of any proprietary products to be used and any specific directions from the manufacturer regarding their use, detailed work methods for affecting the repairs and any other relevant technical information as may be required by the Engineer.

The Contractor shall generally submit these details pre-emptively as part of his CWMS for the relevant construction activity. Where additional or unforeseen repairs are required, the Contractor shall make additional submission as directed by the Engineer.

## 8.4 Cleaning and Waste Management

### 8.4.1 Site Maintenance

The Works includes the housekeeping of the Site including but not limited to:

- (a) Daily cleaning of all amenities and facilities supplied by the Employer to the Contractor;
- (b) Collection and disposal of all domestic, toxic and hazardous waste, oils, empty drums and other containers, waste timber, asbestos impregnated products all in accordance with all applicable Laws and regulations governing the disposal of these items or materials;
- (c) Retrieval of any waste materials deposited on the sea bed by Contractor;
- (d) Collection and storage of all surplus construction material;

- (e) Special clean-ups required throughout the monsoon season and tie down Works required for cyclone alerts including any damage preventative measures to both temporary facilities and amenities and to partly or wholly constructed installations and enclosures;
- (f) Final clean-up and re-instatement of the Site;
- (g) Compliance with all environmental protection requirements.

#### 8.4.2 Construction Waste Management and Disposal

The Contractor's is required to implement procedures for waste minimization to reduce, reuse, recycle and recover as much waste material or reuse as is practical. Waste minimization and segregation shall be exercised during mobilisation, installation, execution and demobilization phases of the Works.

The Contractor shall endeavour to minimise waste materials such as equipment consumables, packaging and the like. All scrap generated during construction shall be segregated into components such as glass, paper products, aluminium, steel, rubber, insulation materials, plastics, steel, wood and the like.

All demolished and excavated material, excess building materials and waste, other than material designated to be stockpiled on the site, shall be removed from site and disposed of in a legal manner. No waste shall be disposed in the Coastal Regulation Zone (CRZ) area. All permits and approvals necessary for the removal and disposal of demolition materials shall be obtained in advance. The municipal wastes generated by labour during construction, shall be handled, transported and disposed as per the relevant municipal handling rules.

All unused material shall be removed from site in a progressive manner either by use of a weekly emptied dump hopper or similar removal arrangement. The sellable wastes shall be sold only to the authorized vendors. The Site and surrounds shall be kept tidy at all times.

Plastics and rubber shall not be disposed-off by burning and is to be handled and disposed as per the draft plastic rules. The use of asbestos will not be accepted. Hazardous wastes shall be handled, stored, managed and disposed-off in compliance with the relevant regulations.

The Contractor shall take all precautions to ensure that with the exception of materials that will form part of the Works, no materials of any kind being used or transported to or from the site fall on adjoining property or public thoroughfares or into the water. Any material or item that does so fall shall be removed as early as practical to the satisfaction of the Engineer.

Construction and demolition (C&D) wastes from this Contract shall remain the property of the Contractor and be removed by the Contractor from the site or adjoining area as applicable to the satisfaction of the Engineer. All such work shall be carried out at the Contractor's own expense for which payment shall be deemed to have been included in the Contract Sum.

If there is any change in the existing rules and the new rules become effective for the construction, transportation, treatment and disposal for municipal, hazardous, C&D, electrical and electronic and plastic wastes, the new rules have to be followed. All such work shall be carried out at the Contractor's own expense for which payment shall be deemed to have been included in the Contract Price.

### 8.5 Protecting Installed Construction

The contractor shall follow procedures and assignments as contained in the project Site Management Plan and will minimize impact to the ongoing operations wherever possible, or as directed by the Engineer.

### 8.6 Completion Procedures

#### 8.6.1 General

Requirements for Tests on Completion, Employer's Taking Over of the Works and Defects Liability shall be as per the requirements of the Conditions of Contract and subject to the additional requirements outlined in this Specification. The additional requirements specified in the following sections shall not be interpreted as limiting the Contractors responsibilities under Contract in this regard in any way.

#### 8.6.2 Preliminary Inspection of the Works at Completion

In addition to the requirements of the Contract regarding Tests on Completion, the Contractor shall undertake joint general inspection of the completed Section with the Engineer and the Employer at least 14 days prior to the Contractors intended submission of application for a Taking-over Certificate for the Section.

The Contractor shall record any and all defects or omissions identified during the joint inspection including any that in the sole opinion of the Engineer and/or Employer are required to be rectified prior to the issue of a Taking-over Certificate and those that may be rectified after issue of the Taking-over Certificate under Defects Liability.

Following the joint inspection, the Contractor shall submit the agreed Draft List of Defects and Minor Omissions including the agreed disposition with respect to the timing and method of rectification of each to the Engineer for approval. The Contractor shall also include on the List any outstanding documentation or administrative requirements under the Contract. The Contractor shall advise the date for rectification of each individual item on the Draft List of Defects and Minor Omissions.

The acceptance of this Draft List of Defects and Minor Omissions by the Engineer shall constitute a Hold Point on the submission of application for a Taking-over Certificate for the Section by the Contractor.

**8.6.3 Inspection of the Works at Completion**

Within 7 days following receipt of the Contractors application for a Taking-over Certificate for the Section (subject to the requirements above), the Contractor shall undertake a further joint general inspection of the Section with the Engineer and Employer.

This final inspection shall be to confirm that all items previously identified on the Draft List of Defects and Minor Omissions as being required to be rectified prior to issue of the Taking-over Certificate, have been rectified and to re-confirm the status of the items permitted to be rectified after issue of the Taking-over Certification for the Works under Defects Liability.

Following the joint inspection, the Contractor shall submit the agreed Final List of Defects and Minor Omissions including the agreed disposition with respect to the timing and method of rectification of each to the Engineer for approval.

The acceptance of this Final List of Defects and Minor Omissions by the Engineer as well as completion of all Tests on Completion and submission of all other required documentation and submittals per the requirements of the Contract shall constitute a Hold Point on the issuing of the Taking-over Certificate for the Section.

**8.7 Submittals at Completion**

**8.7.1 Operation and Maintenance Data**

The Contractor shall provide a full set of all operations and maintenance manuals as may be required under the Contract in hardcopy (03 No. copies) and electronic PDF format to the Engineer prior to submittal of the Contractor’s application for a Taking-over Certificate for the completed Section.

These manuals shall provide sufficient detail for the Employer to operate, maintain, dismantle, reassemble, adjust and repair the Plant. Contractor shall supply manual for Operation and Maintenance of the system in English. The detail content of all such manuals shall be agreed with the Engineer and the Employer in advance.

A Section shall not be considered to be completed for the purposes of taking over as defined in the Conditions of Contract until the Engineer has received in the form required by the Contract final operation and maintenance manuals in such detail, and any other manuals specified in the Specifications and the Drawings for these purposes.

**8.7.2 As-Built Drawings**

The Contractor shall prepare, and keep up-to-date, a complete set of “as-built” records of the execution of the Works, showing the exact as-built locations, sizes and details of the work as executed. These records shall be kept on the Site and shall not be used by the Contractor for any purpose other than for the purposes of the preparation of the As-built Drawings in accordance with the requirements of the Contract.

The Contractor shall prepare a full set of As-built drawings for the whole of the Works based on the Contract Drawings with amendments made to reflect any major changes in set out, design or construction method.

The Contractor shall submit the draft as-built drawings in hardcopy (03 No. A3) and electronic CAD and PDF format to the Engineer for approval prior to the submittal of the Contractor's application for a Taking-over Certificate for the completed Works.

The Contractor shall incorporate all comments and amendments required by the Engineer and once agreed, shall submit the final As-Built Drawings in hardcopy (03 No. A3 and 03 No. A1) and electronic CAD and PDF format to the Engineer.

The Works shall not be considered to be completed for the purposes of taking over as defined in the Conditions of Contract until the Engineer has received these documents in the form required by the Contract.

### 8.8 Project Record Documents

The Contractor shall provide a full set of the project quality records in hardcopy (02 No. copies) and electronic original format and PDF format to the Engineer within 28 days of issue of the Taking-over Certificate for the completed Section.

The Contractor shall maintain separate volume covering quality documentation for any outstanding minor Works carried out under defects liability. This separate volume shall be submitted to the Engineer at least 14 days prior to the expiration of the Contract defects liability period.





KOCHI METRO RAIL LTD  
(WATER METRO PROJECT)



**REQUEST FOR PROPOSAL (RFP)**  
**FOR**  
**ELECTRIC VEHICLE SUPPLY EQUIPMENT (EVSE)**  
**(WATER METRO BOAT CHARGER)**

Under Financial Arrangement With  
German Financial Cooperation with India  
KOCHI WATER METRO PROJECT  
BMZ No. 2013 66657

**PART-2**  
**WORK REQUIREMENTS**

KOCHI METRO RAIL LIMITED  
(A Joint Venture of Govt. of India and Govt. of Kerala)  
4th floor, JLN Stadium Metro Station, Banerji Road, Kochi – 682017

**JANUARY 2021**  
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## Section VIII

# TECHNICAL SPECIFICATION