



**MUMBAI METRO RAIL CORPORATION LIMITED (MMRC)**

**(Joint Venture of Govt. of India and Govt. of Maharashtra)**

NaMTTRI Building, Behind MMRDA, Near Jetwan, Plot No. R-13, 'E'- Block,  
Bandra Kurla Complex, Bandra (East), Mumbai 400051, India.

Telephone: +91-22-26575221

**Invitation for Bids for "Design, Manufacture, Supply, Installation, Testing and Commissioning of Tunnel Ventilation System & Environmental Control System between BKC (excluding) to Mumbai Central (including) Stations."**

Date: [5<sup>th</sup> November 2018]

Loan Agreement Number: [ID-P 268]

IFB Number: [MM3-CBS-TVE (P2L1)]

1. The Government of India has received a loan from Japan International Cooperation Agency (JICA) towards the cost of Mumbai Metro Line 3 (Colaba-Bandra-SEEPZ) Project. It is intended that part of the proceeds of this loan will be applied to eligible payments under the Contract for "Design, Manufacture, Supply, Installation, Testing and Commissioning of Tunnel Ventilation System & Environmental Control System"
2. Bidding will be conducted through procedures in accordance with the applicable Guidelines for Procurement under Japanese ODA Loans, and is open to all Bidders from eligible source countries, as defined in the Loan Agreement.
3. Mumbai Metro Rail Corporation (MMRC) now invites sealed Bids from eligible Bidders for the "Design, Manufacture, Supply, Installation, Testing and Commissioning of Tunnel Ventilation System & Environmental Control System between BKC (excluding) to Mumbai Central (including) Stations." ("The Facilities"). International Competitive Bidding will be conducted in accordance with JICA's "Single-Stage Two Packet (Without Prequalification)" Bidding Procedure.
4. Eligible Bidders may obtain further information from and inspect the Bidding Documents at the office of Mumbai Metro Rail Corporation (MMRC), A-wing, Ground Floor, MMRCL Transit Office Building, North Side of City Park, Bandra-Kurla Complex, E Block, Bandra (East), Mumbai – 400051, India. Kind Attention: **General Manager (RS & Elect.)**, Telephone: +91-22-26575221, Email: [rajeev@mmrcl.com](mailto:rajeev@mmrcl.com) Website: <http://www.mmrcl.com>.
5. A complete set of the Bidding Documents may be purchased by interested Bidders on the submission of a written application to the address above and upon payment of a non-refundable fee of **INR 25,000 (Indian Rupees Twenty Five Thousand Only) or US\$ 375 (US Dollar Three Hundred Seventy Five Only) (Exclusive of GST), in the form of a crossed demand draft in favour of Mumbai Metro Rail Corporation, payable at Mumbai** between 10 AM to 5 PM from 5<sup>th</sup> November 2018 onwards. The Eligibility & Qualification Criteria, IFB can also be downloaded from <https://www.mmrcl.com>.
6. Bids must be delivered at the office of Mumbai Metro Rail Corporation (MMRC), A-wing, Ground Floor, MMRCL Transit Office Building, North Side of City Park, Bandra-Kurla Complex, E Block, Bandra (East), Mumbai – 400051, India, on or before **3:00PM on 10<sup>th</sup> January 2019** and must be accompanied by a Bid security of **INR 5.10 Crore (Indian Rupees Five Crores and Ten Lakhs Only) or USD 750,000 (US Dollars Seven Hundred Fifty Thousand Only) for [MM3-CBS-TVE (P2L1)]**.
7. Bids will be opened in the presence of Bidders' representatives who choose to attend at **4:00PM on 10<sup>th</sup> January 2019** at the office of Mumbai Metro Rail Corporation (MMRC), A-wing, Ground Floor, MMRCL Transit Office Building, North Side of City Park, Bandra-Kurla Complex, E Block, Bandra (East), Mumbai – 400051, India.

Place: Mumbai

Date: 5<sup>th</sup> November 2018

Sd/-

(Smt. Ashwini Bhide, IAS)  
Managing Director, MMRC

# **BIDDING DOCUMENTS**



## **MUMBAI METRO LINE 3 (COLABA-BANDRA-SEEPZ)**

### **CONTRACT MM3-CBS-TVE (P2L1)**

Design, Manufacture, Supply, Installation, Testing and Commissioning of Tunnel Ventilation System & Environmental Control System between BKC (excluding) to Mumbai Central (including) Stations.

### **PART 1**

### **BIDDING PROCEDURE**

### **Section III**

## **EVALUATION AND QUALIFICATION CRITERIA (EQC) (Without Prequalification)**

**November 2018**

**Mumbai Metro Rail Corporation Ltd.  
MMRCL - Transit Office, Wing "A", Ground Floor, North Side of City Park,  
E-Block, Bandra-Kurla Complex, Bandra (East)  
Mumbai-400051, India.**

## **BIDDING DOCUMENTS**

### **Composition of Documents**

|               |  |
|---------------|--|
| <b>Part 1</b> | <b>Bidding Procedure</b>   |
| Section I     | Instructions to Bidders  |
| Section II    | Bid Data Sheet   |
| Section III   | Evaluation and Qualification Criteria (Without Prequalification)                     |
| Section IV-A  | Bidding Forms  |
| Section IV-B  | Pricing Document   |
| Section V     | Eligible Source Countries of Japanese ODA Loans                                      |
| <b>Part 2</b> | <b>Employer's Requirements</b>   |
| Section VI-A  | Employers Requirements –General Specifications including Appendices                  |
| Section VI-B1 | Employer's Requirements – Technical Specifications for Environmental Control Systems |
| Section VI-B2 | Employer's Requirements – Technical Specifications for Tunnel Ventilation System     |
| Section VI-B3 | Employer's Requirements – Technical Specifications for SCADA                         |
| Section VI-B4 | Employer's Requirements – Technical Specifications for Electrical                    |
| <b>Part 3</b> | <b>Conditions of Contract and Contract Forms</b>                                     |
| Section VII   | General Conditions of Contract (GC)  |
| Section VIII  | Particular Conditions of Contract (PC)   |
| Section IX    | Contract Forms   |
| <b>Part 4</b> | <b>Drawings</b>  |
| Section X     | Drawings   |

|               |   |           |
|---------------|---|-----------|
| <b>1.</b>     | <b>Evaluation</b> .....                               | <b>4</b>  |
| <b>1.1.</b>   | <b>Technical Evaluation:</b> .....                    | <b>4</b>  |
| <b>1.1.1.</b> | <b>Project Organization and Key Personnel</b> .....   | <b>4</b>  |
| <b>1.1.2.</b> | <b>Independent Design Assessor (IDA)</b> .....        | <b>5</b>  |
| <b>1.1.3.</b> | <b>Construction Equipment</b> .....                   | <b>6</b>  |
| <b>1.2.</b>   | <b>Economic Evaluation</b> .....                      | <b>7</b>  |
| <b>1.2.1.</b> | <b>Quantifiable nonmaterial nonconformities</b> ..... | <b>7</b>  |
| <b>1.2.2.</b> | <b>Other Factors</b> .....                            | <b>7</b>  |
| <b>1.2.3.</b> | <b>Subcontractors/ Manufacturers</b> .....            | <b>7</b>  |
| <b>2.</b>     | <b>Initial Filter PQ</b> .....                        | <b>9</b>  |
| <b>2.1</b>    | <b>Eligibility</b> .....                              | <b>11</b> |
| <b>2.2</b>    | <b>Historical Contract Non-Performance</b> .....      | <b>12</b> |
| <b>2.3</b>    | <b>Financial Situation</b> .....                      | <b>13</b> |
| <b>2.4</b>    | <b>Experience</b> .....                               | <b>16</b> |
| <b>2.5</b>    | <b>Bid Capacity</b> .....                             | <b>19</b> |

## Evaluation and Qualification Criteria

### 1. Evaluation

Pursuant to the criteria listed in ITB 35.1 (a) – (b), the Bidder shall provide a valid and fully compliant proposal undertaking that he will comply with all clauses in the Employer's Requirements. The proposal shall include the Bidder's methodology, capabilities and expertise for evaluation by the Employer. This section states the requirements for the Bidder's proposal and the evaluation criteria to be adopted by the Employer. The Bidder is advised that the objective of evaluating the Bids is to select the most technically superior and economically advantageous proposal.

The Bid submitted in response to this invitation will be evaluated based on the following:

#### 1.1. Technical Evaluation:

##### 1.1.1. Project Organization and Key Personnel

The Bidder shall demonstrate that it has the minimum personnel for key positions that are listed in the Table below. The proposed personnel shall be included in the project organization chart in **Bid Form 1** in Part 1, Section IV-A.

The Bidder shall provide the details of proposed key personnel, listed below for this contract Phase, stating their experience records in **Bid Form 2 PER-1** and **Bid Form 3 PER-2** in Part 1, Section IV-A.

In case the Bidder proposes to engage a Design Consultant, then he shall provide the name of the proposed Design Consultant and details of relevant design experience in ECS and TVS for Rail / Metro / Large Infrastructure projects in the past 10 years in **Bid Form 4** and also provide the details of the proposed TVS Design Manager, ECS Design Manager and SCADA Design Manager listed below, stating their experience records in **Bid Form 2 PER-1** and **Bid Form 3 PER-2**.

| No. | Position                      | Qualification                                   | Total Work Experience (years) | Experience in Similar Works (years)               | Numbers |
|-----|-------------------------------|---|-------------------------------|---|---------|
| 1   | Project Manager (Team Leader) | Graduate in Electrical/ Mechanical Engineering. | 15                            | 6 (Minimum 3 years as in-charge of similar works) | 1       |
| 2   | Dy. Project Manager           | Graduate in Electrical /Mechanical Engineering. | 10                            | 4   | 2       |

| No. | Position                                    | Qualification                                   | Total Work Experience (years) | Experience in Similar Works (years) | Numbers |
|-----|---|---|-------------------------------|-------------------------------------|---------|
| 3   | Tunnel Ventilation Design Manager           | Graduate in Concerned Disciplines.              | 10                            | 6                                   | 1       |
| 4   | Environmental Control System Design Manager |   | 10                            | 4                                   | 1       |
| 5   | SCADA Design Manager                        |   | 10                            | 4                                   | 1       |
| 6   | Health Safety (Accident Prevention) Manager |   | 10                            | 4                                   | 1       |
| 7   | Interface Manager                           |   | 10                            | 4                                   | 1       |
| 8   | System Testing and Commissioning Manager    | Graduate in Electrical /Mechanical Engineering. | 10                            | 4                                   | 1       |

**1.1.2. Independent Design Assessor (IDA)**

The Bidder shall engage Independent Design Assessor from independent consulting firms without any conflict of interest with Contractor/DDC. Details of experience records of proposed Independent Design Assessor, listed below for this contract Phase, shall be provided in **Bid Form 2 PER-1** and **Bid Form 3 PER-2** in Part 1, Section IV-A.

| No. | Position                          | Qualification                      | Total Work Experience (years) | Experience in Similar Works (years) | Numbers |
|-----|-----------------------------------|------------------------------------|-------------------------------|-------------------------------------|---------|
| 1   | Independent Design Assessor – ECS | Graduate in Concerned Disciplines. | 12                            | 7                                   | 1       |
| 2   | Independent Design Assessor – TVS |                                    | 12                            | 7                                   | 1       |

The information on Bid Form 2 / Bid Form 3 for the proposed TVS Design Manager and Independent Design Assessor-TVS shall clearly demonstrate the possession of skills & knowledge in TVS Design and competence in the following skill parameters (provide project wise details):

- Tunnel Ventilation network modelling studies

- CFD analysis, smoke management system for subway stations and other large building projects
- Tunnel ventilation system analysis and report writing
- Installation of TVS, testing and commissioning
- Operation and control philosophy for TVS, interfacing with SCADA
- Writing functional specifications

The information on Bid Form 2 / Bid Form 3 for the proposed ECS Design Manager and Independent Design Assessor-ECS shall clearly demonstrate the possession of skills & knowledge in ECS Design and competence in the following skill parameters (provide project wise details):

- HVAC design experience on Subway stations and other mission critical projects
- Hands-on experience on Cooling load estimation and energy simulation software
- Green building projects
- Writing functional specifications of HVAC
- Experience on design of Chilled water and air distribution systems
- Testing and Commissioning reports
- HVAC Operation and control philosophy, interfacing with BMS or SCADA

The information on Bid Form 2 / Bid Form 3 for the proposed SCADA Design Manager shall clearly demonstrate the possession of skills & knowledge in SCADA Design and competence in the following skill parameters (provide project wise details):

- SCADA design and implementation
- Developing system architecture
- System functional requirements, RAMS performance requirements
- Define and write interface description documents
- Hands-on field experience in hardware (RTUs, PLCs, Controllers)
- Coding, coding standards, configuration management and software
- Integration, Testing and commissioning of SCADA systems

### 1.1.3. Construction Equipment

The Bidder shall demonstrate that it has the key equipment required for construction, installation, testing and commissioning:

- a) The Bidder shall provide details of the required equipment using **Bid Form 5 EQU** in Part 1, Section IV-A, Bidding Forms. The Bidder shall demonstrate that it has access to required equipment during execution of works. Capacity and number of machines shall be commensurate with the Works Program submitted by the Bidder to enable him to complete the work in stipulated time. The Bidder shall provide ownership/ renting/ leasing arrangement details.
- b) The Bidder shall provide information to insure that the equipment mentioned are available for the Project.

List of Construction Equipment proposed by the bidder:

| No. | Equipment Type and Characteristics | Min Number Required |
|-----|------------------------------------|---------------------|
| 1   | Crane (Minimum 5 Tonne)            | 1                   |
| 2   | New generation Hydra               | 1                   |
| 3   | Extendable Ladder Trolley          | 1 for each station  |
| 4   | Truck (10 Tonne)                   | 2                   |
| 5   | Track Trolley                      | 1                   |
| 6   | Generator (minimum 40kVA)          | 1 for each station  |

**1.2. Economic Evaluation**

In addition to the criteria listed in ITB 38.2 (a) – (c) the following criteria shall apply.

**1.2.1. Quantifiable nonmaterial nonconformities**

Pursuant to ITB 34.3 and ITB 38.2 (d), the cost of all quantifiable nonmaterial nonconformities or omissions (minor omissions or missing items) shall be evaluated for fair comparison of Bids.

**1.2.2. Other Factors**

The following factors and methods will apply under ITB 38.2 (f):

**a) Time Schedule**

Time to complete the Plant and Installation Services from the effective date specified in Article 3 of the Contract Agreement for the whole of the Facilities for this contract Phase 2 shall be **29 months** from the Effective Date as described in Part 2, Section VI-A Appendix 1. No credit will be given for earlier completion.

**b) Work, Services, Facilities, etc., to be provided by the Employer**

Not Applicable

**c) Others**

Not used

**1.2.3 Subcontractors/ Manufacturers**

Subcontractors/ Manufacturers for the following major items of supply or services must meet the following minimum criteria, herein listed for that item. The Bidder shall submit the technical Information of equipment’s proposed in respective Bid Form as mentioned below:

| Item No. | Description of Item                 | Minimum Criteria to be met<br>(Ref Bid Form) |
|----------|-------------------------------------|--|
| A        | Tunnel Ventilation System Equipment |  |



| Item No. | Description of Item   | Minimum Criteria to be met<br>(Ref Bid Form)  |
|----------|---|---|
| A.1      | Tunnel Ventilation Fan  | No. of units provided: 20 with a minimum of 3 years in revenue services <b>(Bid Form 22A)</b> |
| A.2      | Over Track Exhaust Fan  | No. of units provided: 20 with a minimum of 3 years in revenue services <b>(Bid Form 22B)</b> |
| A.3      | Tunnel Booster Fan  | No. of units provided: 4 with a minimum of 3 years in revenue services <b>(Bid Form 22C)</b>  |
| A.4      | Under Platform Air Supply Fan   | No. of units provided: 10 with a minimum of 3 years in revenue services <b>(Bid Form 22D)</b> |
| A.5      | Damper  | No. of units provided: 20 with a minimum of 3 years in revenue services <b>(Bid Form 22E)</b> |
| A.6      | Air compressor  | No. of units provided: 20 with a minimum of 3 years in revenue services <b>(Bid Form 22F)</b> |
| A.7      | Sound Attenuator  | No. of units provided: 20 with a minimum of 3 years in revenue services <b>(Bid Form 22G)</b> |
| A.8      | Nozzle  | No. of units provided: 4 <b>(Bid Form 22H)</b>  |
| A.9      | Electrical panel  | No. of units provided: 10 with a minimum of 3 years in revenue services <b>(Bid Form 22I)</b> |
| <b>B</b> | <b>Environmental Control System Equipment</b>                                 |   |
| B.1      | Water Cooled and Air cooled Chiller   | No. of units provided: 20 with a minimum of 3 years in revenue services <b>(Bid Form 23A)</b> |
| B.2      | Cooling Tower   | No. of units provided: 20 with a minimum of 3 years in revenue services <b>(Bid Form 23B)</b> |
| B.3      | Variable Primary Chilled water Pump for water cooled and air-cooled chillers. | No. of units provided: 20 with a minimum of 3 years in revenue services <b>(Bid Form 23C)</b> |
| B.4      | Condenser water Pump  | No. of units provided: 20 with a minimum of 3 years in revenue services <b>(Bid Form 23D)</b> |

| Item No. | Description of Item  | Minimum Criteria to be met<br>(Ref Bid Form)  |
|----------|--|---|
| B.5      | AHU/FCU  | No. of units provided: 20 with a minimum of 3 years in revenue services <b>(Bid Form 23E)</b>             |
| B.6      | Fan  | No. of units provided: 20 with a minimum of 3 years in revenue services <b>(Bid Form 23F)</b>             |
| B.7      | Fire/Smoke Damper  | No. of units provided: 20 with a minimum of 3 years in revenue services <b>(Bid Form 23G)</b>             |
| B.8      | VRV Unit (for above ground station and mid tunnel vent building) | No. of units provided: 10 with a minimum of 3 years in revenue services <b>(Bid Form 23H)</b>             |
| B.9      | Electrical panel   | No. of units provided: 10 with a minimum of 3 years in revenue services <b>(Bid Form 23I)</b>             |
| <b>C</b> | <b>TVS &amp; ECS Equipment</b>                                   |   |
| C.1      | TVE Control and Monitoring System SCADA                          | No. of units provided: 2 SCADA system with a minimum of 3 years in revenue services <b>(Bid Form 23J)</b> |
| C.2      | Variable Speed Drive   | No. of units provided: 40 with a minimum of 3 years in revenue services <b>(Bid Form 23K)</b>             |

Failure to comply with this requirement will result in the rejection of the Subcontractor/ Manufacturer.

The Bidder's proposal shall provide the information for each subcontractor in the **Bid Form 24**.

In the case of a Bidder who offers to supply and install major items under the contract that the Bidder did not manufacture or otherwise produce, the Bidder shall provide the manufacturer's authorization in **Bid form 25 MAN, Part 1, Section IV-A**, showing that the Bidder has been duly authorized by the manufacturer or producer of the related plant and equipment or component to supply and/or install that item in the Employer's country. The Bidder is responsible for ensuring that the manufacturer or producer complies with the requirements of ITB 4 and ITB 5 and meets the minimum criteria listed above for that item.

## 2. Initial Filter PQ

### (i) Exchange Rate for Qualification Criteria

Wherever a Form in Section IV-A, Bidding Forms, requires a Bidder to state a monetary amount, Bidders should indicate the USD equivalent using the rate of exchange determined as follows:

- (a) For turnover or financial data required for each year - Exchange rate prevailing on the last day of the respective calendar year.
- (b) Value of single Contract - Exchange rate prevailing on the date of the Contract.

Exchange rates shall be taken from the publicly available source **identified in BDS 37.1** or, in case such rates are not available in the source identified above, any other publicly available source acceptable to the Employer. Any error in determining the exchange rates may be corrected by the Employer.

**(ii) Evaluation of Price Bids and Award Criteria**

There are two Contract Lots for the Phase 2 of Tunnel Ventilation and Environment Control Work. The 'Lot P2L1' covers Nine (09) Stations from BKC (excluding) to Mumbai Central (including) and 'Lot P2 L2' covers Eight (08) Stations from Mumbai Central (excluding) to Cuffe Parade.

Bidders are allowed to bid for any one or both Contracts Lots. The Employer shall first open Price Bid of 'Lot P2L1' of all Bidders who submitted substantially responsive Technical Bids.

The Price Bid of 'LotP2 L2' will be opened after the Letter of Acceptance of earlier opened Bid(s) of 'Lot P2L1' is issued. The Price Bid of 'Lot P2L2' will be opened for all other technically qualified Bidders except the Bidder to whom Letter of Acceptance for 'Lot P2L1' has already been issued.

**(iii) Criteria for Initial Filter PQ**

"Initial filter- PQ" will be evaluated for judging the Qualification of the Bidder as per ITB 32. Only those Bidders who qualify in this evaluation shall be taken up for the detailed examination of their Technical Bid. The minimum criteria for Eligibility, Historical Contract Non-performance, Financial Situation (Including Bid Capacity) and Experience, to be met by the Bidder in order to qualify are given in para 2.1 to 2.5 below.

| Initial Filter and PQ Criteria |                      |  | Compliance Requirements |                                      |                       |            | Documentation                                      |
|--------------------------------|----------------------|--|-------------------------|--------------------------------------|-----------------------|------------|--|
| No.                            | Factor/Sub Factor    | Requirement  | Single Entity           | Joint Venture (existing or intended) |                       |            | Submission Requirements                            |
|                                |                      |  |                         | All combined                         | Parties Each Member   | One Member |  |
| 2.1 Eligibility                |                      |  |                         |                                      |                       |            |  |
| 2.1.1                          | Nationality          | Nationality in accordance with ITB 4.3.                              | Must meet requirement   | N/A                                  | Must meet requirement | N/A        | Form 13 ELI-1 and Form 14 ELI-2, with attachments. |
| 2.1.2                          | Conflict of Interest | No conflicts of interests as described in ITB 4.2.                   | Must meet requirement   | N/A                                  | Must meet requirement | N/A        | Letters of Bid.                                    |
| 2.1.3                          | JICA Ineligibility   | Not having been declared ineligible by JICA as described in ITB 4.4. | Must meet requirement   | N/A                                  | Must meet requirement | N/A        | Letters of Bid and Form ACK                        |

| Initial Filter and PQ Criteria   |                                     |  | Compliance Requirements   |                                      |                           |            | Documentation           |
|--|-------------------------------------|--|---------------------------|--------------------------------------|---------------------------|------------|-------------------------|
| No.  | Factor/Sub Factor                   | Requirement  | Single Entity             | Joint Venture (existing or intended) |                           |            | Submission Requirements |
|  |                                     |  |                           | All Parties combined                 | Each Member               | One Member |                         |
| 2.2 Historical Contract Non-Performance  |                                     |  |                           |                                      |                           |            |                         |
| 2.2.1  | History of non-performing Contracts | Non-performance of a Contract(i) did not occur as a result of Contractor's default since 1st January 2016  | Must meet requirement(ii) | N/A                                  | Must meet requirement(ii) | N/A        | Form 15 CON             |
| 2.2.2  | Pending Litigation                  | All pending litigation shall in total not represent more than Fifty percent (50%) of the Bidder's net worth and shall be treated as resolved against the Bidder. | Must meet requirement(ii) | N/A                                  | Must meet requirement(ii) | N/A        | Form 15 CON             |
| 2.2.3  | Litigation History                  | No consistent history of court/arbitral award decisions against the Bidder (iii) since 1st January 2013  | Must meet requirement(ii) | N/A                                  | Must meet requirement(ii) | N/A        | Form 15 CON             |
| <p>Notes for the Bidder</p> <p>(i) Non-performance, as decided by the Employer, shall include all Contracts:</p> <p>(a) where non-performance was not challenged by the contractor, including through referral to the dispute resolution mechanism under the respective Contract, and</p> <p>(b) that were so challenged but fully settled against the contractor.</p> <p>Non-performance shall not include Contracts where Employers decision was overruled by the dispute resolution mechanism. Non-performance must be based on all information on fully settled disputes or litigation, i.e. dispute or litigation that has been resolved in accordance with the dispute resolution mechanism under the respective Contract and where all appeal instances available to the Applicant have been exhausted.</p> <p>(ii) This requirement also applies to Contracts executed by the Bidder as a JV member.</p> <p>(iii) The Bidder shall provide accurate information on the related Bidding Form about any litigation or arbitration resulting from Contracts completed or ongoing under its execution over the last five (5) years. A consistent history of awards against the Bidder or any member of a joint venture may result in rejection of the Bid.</p> |                                     |  |                           |                                      |                           |            |                         |

| Initial Filter and PQ Criteria |                         |   | Compliance Requirements |                                      |  |  | Documentation                    |
|--------------------------------|-------------------------|---|-------------------------|--------------------------------------|--|--|----------------------------------|
| No.                            | Factor/Sub Factor       | Requirement   | Single Entity           | Joint Venture (existing or intended) |  |  | Submission Requirements          |
|                                |                         |   |                         | All Parties combined                 | Each Member  | One Member                                       |                                  |
| 2.3 Financial Situation        |                         |   |                         |                                      |  |  |                                  |
| 2.3.1                          | Financial Performance   | The audited balance sheets or, if not required by the law of the Bidder's country, other financial statements acceptable to the Employer, for the last 5 years shall be submitted and must demonstrate the current soundness of the Bidder's financial position(i) and its prospective long term profitability . As the minimum requirement, a Bidder's net worth calculated as the difference between total assets and total liabilities should be positive. The financial year as applicable in the country of origin of the bidders would be considered. The 'last financial year' will be the latest financial year for which Annual Financial Statements should be available before the final date of Bid Submission after extensions, if any. | Must meet requirement   | N/A                                  | Must meet requirement                                  | N/A  | Form 16 FIN – 1 with attachments |
| 2.3.2                          | Average Annual Turnover | Minimum average annual construction turnover of USD 27.00 (Twenty Seven) million calculated as total certified payments received for contracts in progress and/ or completed, within the last 5 years divided by 5 years. The financial year as applicable  | Must meet requirement   | Must meet requirement                | Must meet Twenty Five percent (25%) of the requirement | Must meet Forty percent (40%) of the requirement | Form 17 FIN – 2                  |

|       |                     |  |                       |                       |  |  |                                     |
|-------|---------------------|--|-----------------------|-----------------------|--|--|-------------------------------------|
|       |                     | in the country of origin of the bidders would be considered. The 'last financial year' will be the latest financial year for which Annual Financial Statements should be available before the final date of Bid Submission after extensions, if any.   |                       |                       | t  |  |                                     |
| 2.3.3 | Financial Resources | (i) The Bidder shall demonstrate that it has access to, or has available, liquid assets, unencumbered real assets, lines of credit, and other financial means (independent of any contractual advance payment) sufficient to meet the cash flow requirements estimated as USD 6.00 (Six) million for the subject Contract net of the Bidder's other commitments. | Must meet requirement | Must meet requirement | Must meet Twenty Five percent (25%) of the requirement | Must meet Forty percent (40%) of the requirement | Form 18 FIR - 1                     |
|       |                     | (ii) The Bidder shall also demonstrate, to the satisfaction of the Employer, that it has adequate sources of finance to meet the cash flow requirements on works currently in progress and for future contract commitments.  | Must meet requirement | Must meet requirement | N/A  | N/A  | Form 18 FIR – 1 and Form 19 FIR - 2 |

Notes for the Bidder

(i) The Bidder shall provide the undertaking that they are not in the process of financial restructuring under Corporate Debt Restructuring Act.

<sup>2</sup> Financial Criteria 2.3.3 given above shall be evaluated as per the chart given below.

**“Only for Demonstration”**

**‘Not to be filled by the Bidder’**

| <b>Bid Evaluation Format (Financial)</b>   |   |          |          |       |   |
|--|---|----------|----------|-------|---|
| <p><b>2.3.3 Financial Resources (Bid Form 18 FIR 1)</b><br/>i) The Bidder shall demonstrate that it has access to, or has available, liquid assets, unencumbered real assets, lines of credit, and other financial means (independent of any contractual advance payment) sufficient to meet the cash flow requirements estimated as USD XX million for the subject Contract(s) net of the Bidder’s other commitments..<br/><b>(Each member must meet 25 % of the requirement and one member must meet 40% of the requirement and All parties combined must meet the 100% requirement.)</b></p> <p><b>2.3.3 Financial Resources (Bid Form 18 FIR 1, Bid Form 19 FIR 2)</b><br/>ii) The Bidder shall also demonstrate, to the satisfaction of the Employer, that it has adequate sources of finance to meet the cash flow requirements on works currently in progress and for future contract commitments.<br/><b>(All parties combined must meet the 100% requirement)</b></p> |   |          |          |       |   |
| No.  | Source of Finance   | Member 1 | Member 2 | Total | Remark  |
|  |   | MUSD     | MUSD     | MUSD  |   |
| <b>2.3.3(i)</b>  |   |          |          |       |   |
| A  | Liquid Assets(Cash & Cash Equivalent)   |          |          |       | From last audited Balance sheet / Financial statement submitted by Bidder |
| B  | Unencumbered Real Assets  |          |          |       | As per FORM 18 FIR 1  |
| C  | Lines of credit (Fund based limit and Non Fund based limit)   |          |          |       | As per FORM 18 FIR 1 & Bank Letter/s submitted                            |
|  | a. Present Lines of Credit  |          |          |       |   |
|  | b. Bank commitment, specific for this contract package  |          |          |       |   |
| D  | Other financial means (Secured and unsecured loans)   |          |          |       | As per Form 18 FIR 1  |
| E  | <b>Total Fund Available (A+B+C+D)</b>   |          |          |       |   |
| F  | <b>% of required liquidity of XX MUSD (E / xx)</b>  |          |          |       | <b>PASS / FAIL as per Clause 2.3.3(i)</b>                                 |
| <b>2.3.3(ii)</b>   |   |          |          |       |   |
| G  | Cash flow available for present & future commitments for the contract   |          |          |       |   |
| H  | Average Monthly Requirement for future contract commitments of bidder (Combined of all JV / Consortium partners)    |          |          |       | Form No. 19 FIR 2   |
| I  | <b>No. of months of cash flow available for present &amp; future commitments (G/H) shall be more than 3 months.</b> |          |          |       | <b>PASS / FAIL as per Clause 2.3.3(ii)</b>                                |



| Initial Filter and PQ Criteria |                                 |  | Compliance Requirements          |  |                       |            | Documentation             |
|--------------------------------|---------------------------------|--|----------------------------------|--|-----------------------|------------|---------------------------|
| No.                            | Factor/Sub Factor               | Requirement  | Single Entity                    | Joint Venture (existing or intended)<br><i>(note (iv) below)</i> |                       |            | Submission Requirements   |
|                                |                                 |  |                                  | All combined   | Parties Each Member   | One Member |                           |
| 2.4 Experience                 |                                 |  |                                  |  |                       |            |                           |
| 2.4.1                          | General Construction Experience | Experience under construction contracts in the role of contractor, management contractor, or sub-contractor for each of the last five (5) years starting 1 <sup>st</sup> January , 2013  | Must meet requirement            | N/A  | Must meet requirement | N/A        | Form 30 EXP - 1           |
| 2.4.2 (a)                      | Specific Experience             | A minimum number of two (2) <b>similar contracts</b> (note (ii) below) that have been satisfactorily and substantially completed (note (iii) below) as a prime contractor (single entity or JV member) for ten years between 1 <sup>st</sup> January 2008 and 31 <sup>st</sup> December 2017. The similarity shall be defined as “A single contract with Air conditioning system of minimum capacity 2000 TR for a MRT/Railways/Airport/Port/etc. project and/or Tunnel ventilation system 2.5 km Tunnel for MRT/Railways/Highways”. | Must meet requirement            | Must meet requirements   | N/A                   | N/A        | Form 31 EXP - 2(a)        |
| 2.4.2 (b)                      | <b>Specific Experience</b>      | For the above or other contracts executed during the period stipulated in 2.4.2(a) above, a minimum construction experience as prime contractor,   | Must meet requirements (can be a | Must meet requirements (can be a                                 | <b>N/A</b>            | <b>N/A</b> | <b>Form 32 EXP - 2(b)</b> |

|  |  |  |                                   |                                  |  |  |  |
|--|--|--|-----------------------------------|----------------------------------|--|--|--|
|  |  | <p>management contractor (note (i) below), or sub-contractor, in the following key activities – Detailed Engineering, Manufacture, Supply, Installation, testing and commissioning of large infrastructure projects/U/G works completed, or under implementation, in last 10 years of any of the following values –</p> <p>(a) Environment Control Systems – One (1) work of USD 13.6 million &amp; above, or Two (2) works of USD 8.5 million &amp; above each, or three (3) works of USD 6.8 million &amp; above each</p> <p>(b) Tunnel Ventilation System - One (1) work of 4.00 km Tunnel &amp; above, or Two (2) works of 2.5 km Tunnel &amp; above each, or three (3) works 1.5 km &amp; above each for MRT/Railways/Highways.</p> | <p>specialist Subcontractor )</p> | <p>specialist Subcontractor)</p> |  |  |  |
|--|--|--|-----------------------------------|----------------------------------|--|--|--|

**Notes for the Bidder**

(i) A management contractor is a firm which takes on the role of contract management as a “general” contractor of sort could do. It does not normally perform directly the work(s) associated with the Contract. Rather, it manages the work of other (sub) contractors while bearing full responsibility and risk for price, quality, and timely performance of the contract.

(ii) The similarity shall be based on the physical size, complexity, methods/technology and/or other characteristics described in Section VI, Employer’s Requirements. Summation of number of small value Contracts (less than the value specified under requirement) to meet the overall requirement will not be accepted.

(iii) Substantial completion shall be based on 80% or more works completed under the Contract.

(iv) For contracts under which the Bidder participated as a JV member, only the Bidder's share, by value, shall be considered to meet this requirement.

(v) In case of a JV, the value of Contracts completed by its members shall not be aggregated to determine whether the requirement of the minimum value of a single Contract has been met. Instead, each Contract performed by each member shall satisfy the minimum value of a single Contract as required for single entity. In determining whether the JV meets the requirement of total number of Contracts, only the number of Contracts completed by all members each of value equal or more than the minimum value required shall be aggregated.

(vi) For Contracts under which the Bidder participated as a JV member or Subcontractor, only the Bidder's share shall be counted to meet this requirement.

## 2.5 Bid Capacity

The Bidders will be qualified only if their available bid capacity is more than USD 34 (Thirty Four) million and will be calculated as under;

Available Bid Capacity =  $2 * A * N - B$ .

Where,

A = Maximum value of works executed in any one year during the last five financial years (value of works will be updated to 2017-18, by assuming 5% escalation for Indian Rupees portion per year and 2% escalation for foreign currency portions per year). In case the value of works executed is shown in foreign currency, then it shall be converted to INR using RBI's exchange rate shown on their website on the last day of the respective calendar year. If the exchange rate cannot be found on RBI's website, then it shall be obtained from [www.xe.com](http://www.xe.com)

N = No. of years prescribed for completion of the works shall be 2.417 years.

B = Value of existing commitments for ongoing works (During period of completion of work under this bid).

In the case of a consortium/JV, the above formula will be applied to each member to the extent of his percentage share in the execution of work under this bid. Fill in the **Bid Form 21 FIR-4**.

Bidders, which do not qualify bid capacity criteria, shall not be considered for further evaluation and shall be rejected.

Note:

- (a) Financial data of work done for latest five financial years has to be submitted by the bidder in **Bid Form 20 FIR-3** along with audited financial statements.
- (b) Value of existing contract commitments for on-going works during period of completion of work under this bid has to be submitted by the bidder in Bid Form 19 FIR-2.