#### BHARATIYA RESERVE BANK NOTE MUDRAN PRIVATE LIMITED

(Wholly owned Subsidiary of Reserve Bank of India) Note Mudran Nagar, Mysuru 570003
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**Not Transferable** 

**Security Classification: Non-Security** 

EXPRESSION OF INTEREST (EOI) FOR DESIGN, SUPPLY, INSTALLATION, COMMISSIONING, PERFORMANCE TESTING, OPERATION AND MAINTENANCE OF 01 SET OF ZERO DISCHARGE RESIDUAL TREATMENT PLANT FOR VARNIKA (INK MANUFACTURING UNIT), BRBNMPL, MYSURU

EOI NO: EOI/001/MYS/VARNIKA-24/2022-23 Date: 21/01/2023

This EOI document contains 14 Pages

#### Details of contact person in BRBNMPL regarding this tender:

Shri S Prabu Kumar (Deputy General Manager) Shri Yogesh Kumar Joshi (Assistant General Manager – PP)

For and on behalf of

GENERAL MANAGER (PP), VARNIKA (INK MANUFACTURING UNIT), BHARATIYA RESERVE BANK NOTE MUDRAN (P) LTD. (Wholly Owned Subsidiary of Reserve Bank of India)

Note Mudran Nagar, Mysuru – 570 003.

Telephone No. 0821-2469078 Fax: 0821-2582955/2582099

Email: <a href="mailto:sprabukumar@brbnmpl.co.in">sprabukumar@brbnmpl.co.in</a>, <a href="mailto:ykjoshi@brbnmpl.co.in">ykjoshi@brbnmpl.co.in</a>

Website: www.brbnmpl.co.in

#### **SECTION I: INVITATION TO SUBMIT OFFER**

## BHARATIYA RESERVE BANK NOTE MUDRAN (P) LTD. (Wholly Owned subsidiary of Reserve Bank of India)

VARNIKA,

Note Mudran Nagar, Mysuru – 570003 Tel No: +91 - 821 –2469078; Fax No: +91 - 821- 2582955, 0821-2582099

Dated: 21/01/2023

EOI No: EOI/001/MYS/VARNIKA-24/2022-23

Sealed offers are invited for Expression of Interest to receive proposal from resourceful bidders for "DESIGN, SUPPLY, INSTALLATION, COMMISSIONING, PERFORMANCE TESTING, OPERATION AND MAINTENANCE OF 01 SET OF ZERO DISCHARGE RESIDUAL TREATMENT PLANT FOR VARNIKA (INK MANUFACTURING UNIT), BRBNMPL, MYSURU"

#### The EOI details are as follows -

| ne Bot details are as follows                      |                                    |  |  |
|--|------------------------------------|--|--|
| Type of Tender (Two Bid / PQB / EOI / RC /         |                                    |  |  |
| Development / Indigenization / Disposal of Scrap / | Expression of Interest             |  |  |
| Security item etc.                                 |                                    |  |  |
| Date of Publication of EOI documents               | 21/01/2023                         |  |  |
| Price of the EOI Document                          | Free                               |  |  |
| Closing date and time for receipt of EOI           | 14:30 Hrs. on 15/02/2023           |  |  |
| Place of receipt of EOI                            | Administrative Building, BRBNMPL,  |  |  |
| Place of Teceipt of EOI                            | Note Mudran Nagar, Mysuru-570 003. |  |  |
| Time and date of opening of EOI                    | 15:00 Hrs. on 15/02/2023.          |  |  |
| Place of opening of EOI                            | Administrative Building, BRBNMPL,  |  |  |
| Frace of opening of EOI                            | Note Mudran Nagar, Mysuru-570003   |  |  |
| Nominated Parson / Designation to receive bulky    | Shri. Y K Joshi,                   |  |  |
| Nominated Person / Designation to receive bulky    | Assistant General Manager - PP,    |  |  |
| documents  | Varnika, BRBNMPL, Mysuru           |  |  |
|  |                                    |  |  |

- 1. The interested parties may obtain further information about this requirement from the above office. EOI documents may be downloaded from the BRBNMPL website: <a href="www.brbnmpl.co.in">www.brbnmpl.co.in</a> or be obtained from the office of Varnika (Ink Manufacturing Unit), BRBNMPL, Mysuru.
- 2. If requested, the EOI documents will be mailed by registered post/Speed Post to the domestic bidders for which charges per set of EOI document shall be Rs.500 within India. The bidder is required to submit a separate Demand Draft drawn on BRBNMPL, payable at Mysuru, for postage charges along with his request for EOI documents. Any delay in receipt of EOI documents will not entitle any bidder/s for extension of submission dates and BRBNMPL will not be responsible for any such delays.
- 3. Interested bidders shall ensure that their EOI documents, duly sealed and signed, complete in all respects as per instructions contained, are dropped in the tender box located at the address specified on or before the closing date and time indicated above, failing which the EOI will be treated as late and will be liable for rejection.
- 4. In the event of any of the above-mentioned dates being declared as a holiday/ closed day for the purchase organization, the EOI document will be received / opened on the next working day at the appointed time.

- 5. BRBNMPL is not responsible for any postal delay and the EOI proposals shall not be accepted for opening after due date and time. Further, interested bidders must satisfy themselves about all the details required to be filled in the EOI before submission of details. All the pages of EOI documents and Annexures, basic information and other supporting documents shall be duly stamped, signed and submitted.
- 6. BRBNMPL reserves the right to accept / reject/ cancel any or all the EOI documents without assigning any reason thereof. BRBNMPL also reserves the right to accept the EOI in whole or in part. Incomplete EOI documents not submitted in accordance with the directions issued shall be liable for rejection. BRBNMPL at its discretion shall reserve the rights to visit the facilities of the bidders.
- 7. The bidders who have been black listed/debarred by BRBNMPL, SPMCIL, BNPMIPL or any PSU or any Government Departments are not eligible for submission of this EOI and an undertaking should be submitted along with the EOI, to this effect.
- 8. The EOI documents are not transferable.
- 9. No counter conditions shall be accepted.
- 10. Further amendment/s, if any, shall be notified on the website of the company only. Interested applicants are requested to visit our website periodically to know any changes / amendments.

Yours faithfully, For & on behalf of BRBNMPL, Mysuru

Shri Yogesh Kumar Joshi, Assistant General Manager - PP, Varnika (Ink Manufacturing Unit), BRBNMPL, Note Mudran Nagar, Mysuru - 570 003.

Telephone: 0821-2469078 Fax: 0821-2582955/2582099

Email: ykjoshi@brbnmpl.co.in

#### **SECTION II: SCOPE OF WORK AND REQUIREMENTS**

This EOI contains following sections -

- 1. About BRBNMPL
- 2. Purpose of EOI
- 3. Indicative models for setting up of treatment plant
- 4. General Company profile of bidders
- 5. Responsibilities Indicative responsibilities of BRBNMPL and Bidder
- 6. Scope of work
- 7. Technical specifications
- 8. Expertise/Capabilities/Capacities/R&D facilities/Patents/Exclusivity of bidders
- 9. Details of Clients
- 10. Experience of bidders in similar fields
- 11. Financial status of bidders
- 12. Plant Visit
- 13. Other information

#### 1. About BRBNMPL

Bharatiya Reserve Bank Note Mudran Private Limited (BRBNMPL), a wholly owned subsidiary of Reserve Bank of India is engaged in printing of Indian Banknotes. BRBNMPL has two printing presses one at Mysuru, Karnataka & the other at Salboni, West Bengal for banknote production. As part of backward integration, BRBNMPL has set up its own Ink Manufacturing Unit (Varnika) at Mysuru. The Varnika is capable of manufacturing all types of inks required for printing of Indian banknotes. Varnika of BRBNMPL has its own state of the art automated Varnish Plant capable to manufacture all types of high quality varnishes used in manufacture of banknote printing inks.

#### 2. Purpose of EOI

The proposed Zero discharge Treatment Plant at Varnika (Ink Manufacturing Unit) is required for treatment of residues generated in the security ink manufacturing process, cleaning liquids, dry powder etc. cumulatively in a single lot as detailed in <u>Sl.No 6 & 7</u>. Expression of interest is therefore invited from the National reputed companies (under make in India) /agencies /laboratories /institutions/manufacturers, which are involved similar type of chemical treatment process.

- This EOI aims for, receiving proposal from resourceful vendors having proven technology
  for treatment of various used chemicals, unusable process ink, cleaning liquids, dry powder
  etc. and disposal if any, shall be complied as per pollution control board guidelines
  (KSPCB/CPCB).
- Exploring various models and finalising best suitable model as required by BRBNMPL
- Estimated cost of project.

This document is not a pre-qualification bid notice, tender or request for proposal and has no commercial implication. This document does not create or purport to create any obligation to BRBNMPL to enter in to agreement at any point of time; past, present or future. The indicative steps for tendering, if BRBNMPL desires so and at the discretion of BRBNMPL, is given in Annexure C.

#### 3. Indicative models for setting up of treatment plant

Following is business model (indicative but not restricted) which can be adopted for setting up the treatment plant. Based on the responses received from this EOI, a suitable business model that needs to be followed will be clearly specified in the tender that will be floated subsequently.

• BOT –Build, Operate and Transfer

Bidder is required to provide their proposal clearly indicating the facilities and expertise they possess in setting up of treatment plant. Along with the project report they may submit reply to the questionnaire attached as Annexure B.

#### 4. General Company Profile of Bidders

The following details may be furnished -

- Treatment plants established by bidder
- Website details
- Annual reports
- Company profile
- Contact details

# 5. Indicative Responsibilities of BRBNMPL and Bidder (Responsibility will be categorised in the subsequent tendering process once the treatment model is finalized):

- Enter into agreement as per the suitable model which will be indicated in the subsequent tendering activity
- Infrastructure development like plant design, layout design etc.
- Machinery procurement.
- Procurement of necessary chemicals, consumables etc.
- Manpower arrangement.
- Treatment of various used chemicals, unusable process ink, cleaning liquids, dry powder etc. in a single lot and disposal if any, shall be complied as per pollution control board guidelines.
- Liasioning with pollution control board for obtaining clearance for setting up & operation of the treatment plant.
- Annual Maintenance Service support required for the smooth running of the treatment plant
- Operational and maintenance staff deployment

#### 6. Scope of work:

The scope of work includes "DESIGN, SUPPLY, INSTALLATION, COMMISSIONING, PERFORMANCE TESTING, OPERATION AND MAINTENANCE OF 01 SET OF ZERO DISCHAGE RESIDUAL TREATMENT PLANT FOR VARNIKA (INK MANUFACTURIN UNIT, BRBNMPL AT MYSURU"

The entire responsibility of the choice of hardware and software components lies with bidder to meet the following requirements:

- (i) Equipment's and accessories.
- (ii) Incidental services

- (iii) Dedicated Software with license if any;
- (iv) Dedicated interfaces or hardware if any
- (v) Other accessories considered necessary to make the proposal self-contained and complete for installation, Commissioning & testing.
- (vi) Provide the details of any additional advance features beyond the scope of EOI.
- (vii) Details for each equipment/accessories to be provided by the bidders.
- (viii) The address / contact details of the office / authorized dealers who will be responsible for operation/service / maintenance shall be clearly mentioned.
- (ix) The proposed system should be in such a way that it should have minimum operating and maintenance cost which may be needed to quote during further tendering process.
- (x) Supplier shall visit the site, inspect the proposed area and effluent for better understanding of requirement before participating in EOI & license.
- (xi) Obtaining the clearance from pollution control authorities
- (xii) Disposal of wet & dry wastages generated from treatment plant as per pollution norms.

#### 7. Technical specifications:

- 1. The treatment plant shall be zero discharge designed in such a way that all the listed residuals (leftover ink, leftover over raw materials, liquid solvents, and varnishes) used in security ink manufacturing shall be treated as a whole.
- 2. The supplier should submit the proposal with detailed technical write up of the process offered, detailed write up should comprise process flow, equipment's used, layout of equipment's, specifications of equipment's, consumables, total area required, utilities requirement like power, water, pneumatic supply etc. It should be a project report of the offered system. The offered system should be in accordance to the guidelines of pollution control board comply with safety systems incorporated in it.
- 3. The supplier should offer entire Treatment Plant with latest technology and latest features.
- 4. The proposed Waste Chemical Treatment Plant should be able to treat the listed effluents, used solution and powder as per the pollution norms. The treated output should be in solid waste and liquid effluent. The disposal of solid waste is in the scope of bidder. The disposal of the solid waste should be in accordance with the prevailing regulations of the government. The liquid waste to be further treated and disposed as per pollution norms.
- 5. The state/central pollution board should certify the proposed system. Certification from concerned pollution control board is in the scope of supplier.
- 6. The tentative quantity and nature of product that require processing and ultimate disposal in an environment friendly manner confirming to state /central pollution control board.

| Sl.No | Description                      | Nature of product                 | Content of product  | Aprox.Quantity |
|-------|----------------------------------|-----------------------------------|---|----------------|
| 1.    | Unusable Process<br>Leftover ink | Ink removed as skin in paste form | Varnish, pigments, calcium carbonate, silica, solvent, drier, Wax | 45000 Kg/Year  |
| 2.    | Used wiping solution             | Wiping solution mixed with ink    | Wiping solution, Ink  | 9720 Kg/Year   |

| 3. | Cleaning Liquids                  | Wash liquid from cleaning    | Washed ink, water,   | 1500 Litre/    |
|----|-----------------------------------|------------------------------|----------------------|----------------|
|    |                                   | of vessels, machine          | cleaning solution,   | year           |
|    |                                   | parts, valves and floor - in | kerosene             |                |
|    |                                   | liquid form                  |                      |                |
| 5  | Dry powder from Dust              | Dust of CaCO3, pigments      | CaCO3, pigments and  | 100 Kg/ year   |
| 3  | Collector                         | and fumed silica etc.        | fumed silica, wax.   | 100 Kg/ year   |
| 6  | Effluent from Varnish             | Wash liquid from tank        | Resins, oil, acid,   | 14,000         |
|    | Plant                             | cleaning. Varnish and other  | solvent, caustic     | Litre/Year     |
|    |                                   | raw material waste           |                      |                |
| 7  | R&D and QC Lab Used Chemical from |                              | Sodium Hydroxide,    | 120 Litre/Year |
|    |                                   | flocculation test and        | water, mixed organic |                |
|    |                                   | solubility test from the lab | solvent and mixed    |                |
|    |                                   |                              | diluted acid         |                |
|    |                                   |                              |                      |                |

Note: The above stated effluents have been mixed in proportion of generation & chemical analysis has been done. The report of chemical analysis is enclosed for reference.

- 7. Bidder should provide the list of chemicals and consumables (along with consumption rate) those are required for treatment activity and to operate the plant.
- 8. The proposed system should work in safe, non- hazardous and automated process mode and system to avoid the occurrence of human error.
- 9. It should have methodology to check and record the quality and quantity of treated liquid discharge.
- 10. The complete offered plant should be compact and to be installed in 30 m (length) X 05 m (width) area. However, if required supplier can design the plant in two floors. Adequate and safe areas for maintenance and operation should be incorporated in the design of the proposed system.
- 11. All the equipment's used should be of IS standard and compliant to the safety standards of India /Atex as per the process and equipment's requirement.
- 12. BRBNMPL will only provide the utilities as Power, Water & Pneumatic supply at one end of the proposed area. All the required works i.e. electrical, Mechanical, Civil etc. for installation of plant is in the scope of bidder.
- 13. Bidder should visit the site before submitting his offer for proper understanding the product to treat, process of generation of various disposals, location of proposed plant and other requirements.
- 14. The output of the treatment plant should be in compliance with the pollution norms established by the Sate /central pollution boards.

#### 8. Expertise, capabilities, capacities, R&D facilities, Patents/Exclusivity

The bidder may furnish the details of the expertise, capabilities, capacities, R&D facilities, Patents/Exclusivity etc., with regard to treatment of various chemicals.

#### 9. Details of clients

The bidder may furnish complete details of clients to whom they have delivered similar products and/or services.

#### 10. Experience

The bidder may furnish the details of works carried out and experience in similar such fields (which includes setting up of treatment plant)

#### 11. Financial status of the bidder

The bidders may furnish the company turnover details, annual reports for the last three financial years ended on 31/03/2021.

#### 12. Plant Visit:

At the discretion of BRBNMPL, a committee may visit the facilities of bidders or the site of clients to whom the bidder has claimed having provided similar such services.

#### 13. Other information:

- a) Performance certificate/Appreciations issued by reputed organisations indicating that they have well defined quality systems and procedures for treatment plant.
- b) Special accreditations, if any.
- c) Approved vendor status for commercial/government agencies for treatment plant if any.
- d) Established/Operating/Maintaining treatment plant in the Indian/international market for the last five years.
- e) Preferably ISO or Equivalent certification for quality & Environment Management System.
- f) Willingness to give unrestricted rights to BRBNMPL for technology.
- g) All legal laws of India with jurisdiction at Mysuru are applicable.
- h) Technical Literature/Catalogue for related products.
- i) The Bidder should indicate that authorized signatory is competent and legally authorized to submit the tender and/or to enter into legally binding contract. The bid shall be legally binding on the Bidder and are required to submit the authorization letter to that effect.
- j) The Bidder shall clearly indicate in the EOI if any patent or other proprietary rights are involved for the treatment plant and if so whether the applicant has unlimited legal rights to deal with them/use them. The applicant shall completely indemnify and hold harmless the Purchaser from and against any claims of infringement of any patent from any source. The abuse of patent rights resulting in cartel formation could lead to permanent disqualification of the applicant. The Purchaser reserves the right to take such action as deemed fit over the same, without assigning any reason thereof.
- k) BRBNMPL will be entitled to seek additional documents / information from any applicant at any point in time.
- 1) All the documents including balance sheet and profit and loss account should be submitted in English language for the last 3 years.
- m) All experience, past performance, capacity/capability related data and other necessary declarations should be certified by the authorized signatory of the Applicant.
- n) The Bidder may be required to submit further documents/clarifications/undertakings/declarations, if mandated by BRBNMPL and/or by Government of India.
- o) The Bidder is required to submit a self-declaration that they are not engaging any agents for participation in this EOI.
- p) BRBNMPL reserves the right to reject any applications or cancel the EoI without assigning any reason and without any intimation on national security considerations or change in ink specifications or any other ground which is beyond the control of BRBNMPL.

#### 2. General Instructions for the Bidder:

- a) The information provided by the bidders shall be scrutinized. Additional information, if required shall be sought from the bidders. At the discretion of BRBNMPL, site visit shall be carried out to understand the capabilities.
- b) The applications as per enclosed format, are to be submitted in a sealed cover super scribing on the top of the cover "EXPRESSION OF INTEREST (EOI) FOR DESIGN, SUPPLY, INSTALLATION, COMMISSIONING, PERFORMANCE TESTING, OPERATION AND MAINTENANCE OF 01 SET OF ZERO DISCHARGE RESIDUAL TREATMENT PLANT FOR VARNIKA (INK MANUFACTURING UNIT), BRBNMPL, MYSURU" to The General Manager (PP), VARNIKA, BRBNMPL, Note Mudran Nagar, Mysuru 570003 by 1430 hrs. IST on or before 15/02/2023. The entire set of submissions of the bidders (including annexures, supporting documents) shall be serially page numbered with the declaration on total number of pages.
- c) Applications received after the due date and time shall be liable for rejection. The responsibility to submit EOI before the due date and time rests with Bidder and BRBNMPL will not entertain any explanation/reason for late submission.
- d) BRBNMPL will not be responsible for any delay in delivery of bids.
- e) Bidder shall submit the following further declarations/undertakings along with EOI application
  - Undertaking not to reveal the details and outcome of discussions to any third party.
  - An undertaking that the signatory is competent and legally authorized to submit the tender and/or to enter into legally binding contract on behalf of the bidder.
  - A declaration that the Bidder is not in the list of blacklisted/ debarred firms of any Government Agency anywhere in the world.
  - An undertaking that the bidder is accepting all the terms and conditions of EOI and abides by it without any counter conditions.
  - The Bidder shall undertake that they will be responsible to maintain secrecy, security and exclusively in case contract is awarded to them.
  - Undertaking that the information given in the documents is correct and the Bidder is aware that any information provided is found to be false at a later stage BRBNMPL reserves the right to reject/disqualify the Bidder at any stage of the tendering process without assigning any reason.
  - A duly signed and stamped confidentiality statement as given below is to be furnished: "The information(s) contained in the tender document will not, in whole or in part be reproduced, transferred to other documents/electronic media or disclosed to others without written consent of BRBNMPL".
  - Undertaking by the bidder that only one bid from the Group companies has been submitted in response to the EOI.

#### **ENCLOSURES:**

- 1) Annexure A: Application Format
- 2) Annexure B: Questionnaire for setting up treatment plant.
- 3) Annexure C: Indicative steps for tender.
- 4) Annexure D: Chemical analysis report

### APPLICATION FOR EXPRESSION OF INTEREST

## (Bidder shall submit their response with respect to each point)

| Sr.<br>No. | Details  | Response from the Bidder<br>(Supportive documents should<br>be submitted wherever<br>applicable and Page No. where<br>the supporting documents are<br>enclosed should be mentioned) |
|------------|--|---|
| 1.         | Name and address of Bidder   |   |
| 2.         | Has the bidder been supplied, installed and commissioning similar treatment plant during the last five years? If not, specify the date from when the Bidder is in business of treatment plant?                           |   |
| 3.         | Whether bidder is having any previous experience on treatment plant. If yes, details may be provided.  |   |
| 4.         | Total No of similar treatment plant supplied, installed and commissioned during last five years  |   |
| 5.         | Documents, if any for proving technical competence for supply, installation & commissioning treatment plant.   |   |
| 6.         | Details of all treatment facilities with location, address, capacities installed by Bidder.  |   |
| 7.         | Financial Details for last three years ended as on 31/03/2022  |   |
| 8.         | All financial details, experience, past performance and capacity/capability related data should be personally certified by authorized signatory of the Bidder or the Holding Company/Parent Company, as the case may be. |   |
| 9.         | Whether the Bidder has suffered any financial losses for more than one year during last three years?   |   |
| 10.        | Whether the Net worth of the Bidder has eroded more than 30% in the last three years?  |   |
| 11.        | Name, address, emails and telephone numbers of the shareholders and directors of the Bidder and their other activities.  |   |
| 12.        | Is the Bidder is owned by another company? Yes/No  |   |
| 13.        | If yes, please furnish the details of the ultimate holding company with complete address and their activities.   |   |
| 14.        | The consolidated balance sheet enclosed?   |   |
| 15.        | Details of experience/methods in treatment plant   |   |
| 16.        | Details of treatment plant machinery installed   |   |
| 17.        | Details of control system for controlling the quality parameters of treatment plant.   |   |

18. Details of testing facilities available. 19. Following undertaking/declaration/details are enclosed with application Incorporation certificate, shareholding details and board composition of the Manufacturer Undertaking not to reveal the details of treatment plant contained in the main tender documents to any third Undertaking that it will be responsible to maintain secrecy, security and exclusively in case a contract is awarded. Declaration that signatory is competent and legally authorized to submit the tender and/or to enter into legally binding contract. A duly signed and stamped confidentiality statement as given below: "The information(s) contained in the tender document will not, in whole or in part be reproduced, transferred to other documents/electronic media or disclosed to others without written consent of BRBNMPL". A declaration that the Bidder is not in the list of blacklisted/ debarred firms of any Government Agency anywhere in the world. Undertaking that the bidder is accepting all the terms and conditions of EOI and abides by it without any counter conditions. Undertaking that the information given in the documents is correct and the Bidder is aware that any information provided is found to be false at a later stage BRBNMPL reserves the right to reject/disqualify the Bidder at any stage of the tendering process without assigning any reason. A self-declaration that no agents are engaged or proposed to be engaged for participation in this EOI Undertaking by the bidder that only one bid from the Group companies has been submitted in response to the EOI.

Authorized Signatory of Bidder Firm

Name:

Designation:

Date:

Seal of the Company

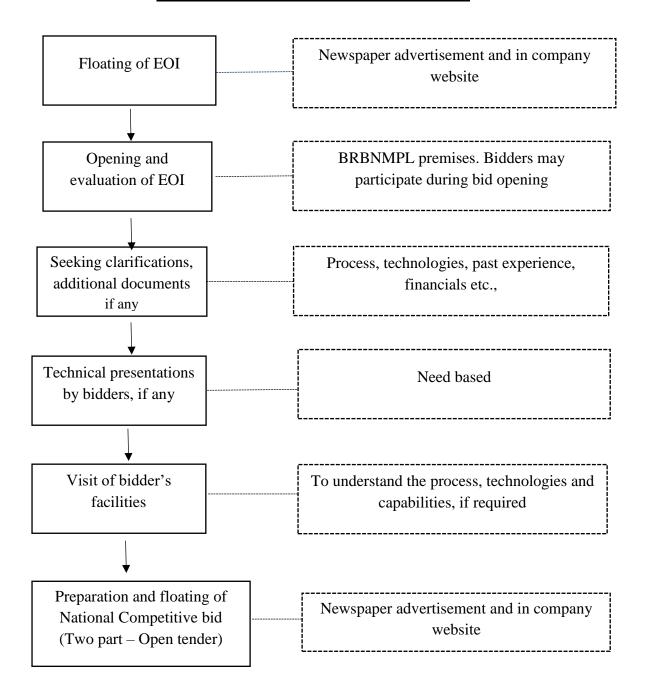
# Questionnaire for setting up of treatment plant at Varnika, BRBNMPL, Mysuru (To be filled by bidders)

| Sl.<br>No. | Questionnaire  | Response from the Bidder (Supportive documents should be submitted wherever applicable and Page No. where the supporting documents are enclosed should be |
|------------|--|---|
| 1.         | Method/technology adopted/proposed for treatment plant   |   |
| 2.         | Proposed business model  |   |
| 3.         | Modalities of proposed Model   |   |
| 4.         | Working capital requirement  |   |
| 5.         | Chemicals, consumables required for treatment plant  |   |
| 6.         | List of equipment – Main equipment, auxiliary equipment and utilities required for treatment plant |   |
| 7.         | Quality Control requirement  |   |
| 8.         | Detailed process steps treatment plant   |   |
| 9.         | Infrastructure requirement   |   |
| 10.        | Suggested plant layout   |   |
| 11.        | Requirement of utility requirement like power, water, compressed air etc.                          |   |
| 12.        | Manpower with skill level requirement  |   |
| 13.        | Skill level requirement  |   |
| 14.        | Mechanism for waste disposal   |   |
| 15.        | What are the licenses required for the proposed treatment plant?                                   |   |
| 16.        | What are the other processes/techniques available for treatment plant                              |   |
| 17.        | Safety program required for this treatment plant?  |   |

| Authorized Signatory of Bidder Firm |
|-------------------------------------|
| Name:                               |
| Designation:                        |
| Date:                               |

Seal of the Company

#### The following indicative steps will be followed



## **Chemical analysis report**

| S.No | Test                                       | Unit | Result         | Test Method     |
|------|--|------|----------------|-----------------|
| 1    | pH Value                                   | -    | 12.34          | IS 3025 (P 11)  |
| 2    | Biochemical Oxygen Demand (3 days at 27°C) | -    | 14000          | IS 3025 (P 44)  |
| 3    | Chemical Oxygen Demand                     | mg/l | 138176         | IS:3025 (P 58)  |
| 4    | Total Dissolved Solids                     | mg/l | 7000           | IS: 3025 (P 16) |
| 5    | Total Suspended Solids                     | mg/l | 2650           | IS: 3025 (P 17) |
| 6    | Oil & Grease                               | mg/l | 494728         | IS: 3025 (P 39) |
| 7    | Chloride                                   | mg/l | 3131           | IS: 3025 (P 32) |
| 8    | Total Kjeldhal Nitrogen                    | mg/l | 107.46         | IS: 3025 (P 34) |
| 9    | Ammonical Nitrogen                         | mg/l | BDL (DL 0.5)   | IS: 3025 (P 34) |
| 10   | Zinc                                       | mg/l | 0.076          | IS: 3025 (P 2)  |
| 11   | Fluoride                                   | mg/l | 0.65           | IS: 3025 (P 60) |
| 12   | Dissolved phosphate                        | mg/l | 14.56          | IS: 3025 (P 31) |
| 13   | Iron                                       | mg/l | 172.97         | IS: 3025 (P 53) |
| 14   | Copper                                     | mg/l | 0.369          | IS 3025 (P 2)   |
| 15   | Lead                                       | mg/l | 0.080          | IS 3025 (P 2)   |
| 16   | Arsenic                                    | mg/l | BDL (DL 0.01)  | IS 3025 (P 37)  |
| 17   | Cadmium as Cd                              | mg/l | BDL (DL 0.003) | IS 3025 (P 2)   |
| 18   | Total Chromium                             | mg/l | 0.195          | IS 3025 (P 2)   |
| 19   | Nickel                                     | mg/l | 0.231          | IS 3025 (P 2)   |