



## HYDERABAD METROPOLITAN DEVELOPMENT AUTHORITY

Buddha Purnima Project Authority, # 6-1-2/1, Tank Bund Road, Hussain Sagar,  
LIC Division – Post, Hyderabad – 500063

### **Bioremediation of Hussainsagar Lake**

#### **Global Invitation for Request for proposal to design, procure, implement, Engineered Bio-Remediation to improve the water quality**

**Tender Notice No : HMDA/HCIP/2/2010-2011**

**Date:18.06.2010**

Hussainsagar Lake situated in the heart of Hyderabad Metropolitan Area, Andhra Pradesh, India is a man made lake built in 1562 utilized for drinking water facility for the city till 1930's. The lake is spread over 4.7 Sq.kms and volume of 27 million cum approximately connected with 4 major drains that discharges the storm water and untreated sewage into the lake. The total catchment area of the lake is 240 sq kms that contributes inflows into the lake. With the rapid residential and industrial growth in the catchment area, the sewage and industrial effluents flow into these nalas that essentially feed the lake , leading to its contamination and eutrophication. Due to input of nitrogen and phosphorus the eutrophic lake has become a breeding ground for production / growth of the blue green algae and the nuisance feeds making it unfit for use in any human activity.

The Hyderabad Metropolitan Development Authority (HMDA) the premier agency of the Government of Andhra Pradesh has taken up the Hussainsagar Lake and Catchment Improvement Project with the financial assistance of JICA in order to bring the lake to its original glory. As a part of the project, the HMDA has initiated a number of activities Viz Diversion of sewage inflows, STP's to discharge high quality of treated effluent in the lake , Nala Improvements in the catchment etc. However these measures are long term and will be taking some time to show immediate effect on the lake water quality.

To improve the overall water quality and to arrest the Algal blooms and foul smell emissions, HMDA intends to take up an in-situ Bioremediation process using Engineered-Microbial cultures that can be added to the polluted lake water for its improvement. The Bioremediation project shall consists of designing and implementing an Engineered-Microbiological remediation systems that will improve water quality, sediment quality, reduce the algal blooms, increase the Dissolved Oxygen content of the water body, providing oxidizing conditions at the sediment water interface so has not to have metallic or non metallic dissolutions of the contaminant ( organic / inorganic ) to reduce the concentration of the suspended matter ( turbidity), increasing transparency of water, reduce the presence of the pathogenic bacteria etc., and to mitigate foul

smell conditions at the point of nala confluence. The period of the bioremediation project is one year and with further three years of Operation and Maintenance of lake. The water quality of the lake shall be as stated below after the completion of Bioremediation of the lake and shall be maintained consistently during the period of Operation and Maintenance.

<b>Parameters</b>	<b>Type SW-2 (Contact water use)</b>
<b>BOD</b>	< 10 mg/L
<b>COD</b>	< 50 mg/L
<b>pH</b>	6.5 - 8.5
<b>Suspended Solids</b>	20 - 30 mg/L
<b>Dissolved O<sub>2</sub></b>	4.0 mg/L
<b>Colour</b>	Non-noticeable
<b>Odour</b>	Non-offensive
<b>Floating Matters</b>	Non-obnoxious
<b>E-coil</b>	100 MPN / 100 ml
<b>Total - N</b>	< 10 mg/L
<b>Total - P</b>	< 1.0 mg/L

HMDA now invites Proposals in single stage three cover system (Cover-I- Eligibility Criteria, Cover-II – technical Proposals for the bioremediation of this project, Cover-III- Financial Proposals) from reputed National and International agencies who have proven experience in the Bioremediation projects for similar nature and have designed appropriate biotechnology systems to avert pollution of water bodies.

### **Eligibility Criteria.**

#### **Technical Criteria:**

1. A single entity company with established local office in India incorporated in any country (certificate of Incorporation shall be enclosed)
2. The bidder shall have a proven track record in the business of employing engineered bioremediation techniques for lake restoration , improving the quality of the lake impounded water, water pollution control etc., and shall have been in the business of employing engineered bioremediation techniques for a period of last 5 years.
3. The agency shall have demonstrated experience of pollution elimination or abatement projects by bioremediation techniques with a proven track record of using their patented technology with official documentation and site references. In addition to this, bidders

shall submit the CV of the principle investigators who has developed the bioremediation process and its success at various projects completed by the bidder.

4. The agency shall be recognized by National or International reputable organization in the field relating to Biochemical/ Microbiological technology with reference to mitigation of pollution.
5. The company shall demonstrate the proven track record that they have full scale production facility to produce Microbial cultures without any contamination of pathogenic organisms which will be used in this bioremediation project. In addition the bidder does not have any past / pending/ ongoing legal issues with the Government( both Indian and International) with regards to application of bioremediation methods for pollution control.
6. Shall have National / International accreditation in handling and facilities to manufacture the bacterial cultures and media for pollution preventions during the last five years.

#### **Financial Criteria.**

Shall have minimum annual turnover of INR 20.00 crores for each of the last three years in the fields of bioremediation. The Documentary proof in the form of a Certificate from the statutory auditor of the Bidder's company duly signed and stamped by the statutory auditor or certificate from client's authorized representative notarized by the authorized active notary public needs to be submitted as proof for the above in English language.

#### **Instructions.**

The interested agencies shall verify the water quality of the lake, sediment quality , scope of the project and submit all the particulars mentioned in the Request for Proposal such as eligibility criteria , financial criteria and the technical proposals duly showing the treatment process with the level of degree of improvement of water quality and sustenance of the lake after remediation along with the infrastructure facilities, logistics proposed for the treatment etc. The Financial proposals shall also be submitted in a separate sealed cover which would be considered for opening after the selection of the agency based on the eligibility criteria , credentials , technical proposals suitability to the project. All the documents must be notarized by the authorized and active notary public.

If required , the agency shall make a detailed presentation to HMDA of their technical proposals, i.e., the Engineered Bio-Remediation process, approach in design, implementation, program and deliverables etc, in improving Lake water quality at their own cost.

Based on the technical proposals given for the project, an agency will be considered and their financial bid will be opened.

The applicants shall submit the proposals with all the requisite information along with a demand draft of **INR.2,00,000/- ( Indian Rupees Two Lakhs only)** refundable drawn in favour of Metropolitan Commissioner, HMDA on any Nationalized bank, payable at Hyderabad. A pre bid meeting is scheduled on 12.07.2010 at 11.00 A.M.

Last date for submission of the proposal complete in all aspects shall reach the Office at the address given below latest by 4.00 P.M IST on 23.07.2010

The agency who submits the improper and inconsistent documents shall be summarily rejected without any further correspondence. HMDA reserves right to reject any or all Tender at any stage without any reason what so ever. HMDA also reserves right to hold, modify, withdraw or cancel the Tender process without any intimation and the decisions taken by HMDA shall be final and binding on the agencies at all the stages of selection of the agencies and award of work.

Address:-

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For clarifications contact:

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Metropolitan Commissioner,  
HMDA