

**EXPRESSION OF INTEREST (EOI) FROM
ENGINEERING COLLEGES FOR DEVELOPMENT OF
AN APPLICATION SOFTWARE FOR THE DESIGN OF
FULLY AUTOMATED COMMUNITY MICRO
IRRIGATION SYSTEM**

EOINo:KIIDC / 01 / 2021-22

Date: .04.2021



**KERALAIRRIGATIONINFRASTRUCTUREDEVELOPMENTCO
RPORATION LTD.(KIIDC)**
(AGovernmentofKeralaUndertaking)

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APRIL 2021

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EXPRESSION OF INTEREST (EOI) FROM

ENGINEERING COLLEGES FOR DEVELOPMENT OF AN APPLICATION SOFTWARE FOR THE DESIGN OF FULLY AUTOMATED COMMUNITY MICRO IRRIGATION SYSTEM

Name of work: Expression of Interest (EOI) from Engineering Colleges for Development of an Application Software for the Design of Fully Automated Community Micro Irrigation System.

1. INTRODUCTION

Kerala Irrigation Infrastructure Development Corporation Ltd. (KIIDC), a Government of Kerala undertaking, formed for the development and promotion of small, medium and large scale irrigation and water supply project units in the State of Kerala. KIIDC as a Government of Kerala Public Sector Undertaking (PSU) is implementing works (i.e. referred to as the 'Projects') entrusted to it by various Government Departments viz. Water Resource Department (WRD), Kerala Infrastructure Investment Fund Board (KIIFB), Tourism Department of Kerala, Kerala Academy for Skills Excellence (KASE), RashtriyaUchchatarShikshaAbhiyan (RUSA) scheme under the Ministry of Human Resource Development (MHRD), Haritha Kerala Mission etc. as an Accredited Agency, Special Purpose Vehicle (SPV) and Project Management Consultants (PMC).

The APJ Abdul Kalam Technological University (initially Kerala Technological University)(KTU) in collaboration with Kerala Irrigation Infrastructure Development Corporation Ltd. (KIIDC) is seeking to invite 'Expression of Interest (EOI) from Engineering Colleges for Development of an Application Software for the Design of Fully Automated Community Micro Irrigation System'.

2. PROPOSED PROJECT DETAILS

2.1 BRIEF DESCRIPTION

The proposed project is for providing automated Community Micro Irrigation system in the command area of Moongilmada Lift Irrigation Scheme (LIS) in Chittur area, Palakkad. The Moongilmada LIS is situated in the Eruthenpathy Grama Panchayat, a rain shadow region and the groundwater level is declining at an alarming rate. Water received from various projects are not at all sufficient to meet the irrigation needs. In order to ensure the optimum utilization of water and increased crop yield, Community Micro Irrigation system is proposed in the Moongilmada LIS. The main crops coming in the command of LIS are the

coconut and intercrop (fodder, nutmeg and cocoa), banana and vegetables crops.

The KIIDC's proposed project includes design, supply, installation, testing and commissioning of Community Micro Irrigation systems, construction of pumping stations, transmission line and necessary transformers, control room with automated drip irrigation system including operation and maintenance. This project is made for optimal and sustainable use of Community Micro Irrigation system to enhance productivity and water/fertilizer use efficiency which can help to grow optimum crop yields. After the implementation of project, crop productivity can be doubled. Post execution of project farmers can overcome the problem of water scarcity, energy, fluctuating water level in river bed etc. Apart from this one can expect about 40% saving in water and energy, saving in fertilizers, pesticides, labour etc. As a result of execution of project entire lifestyle of cultivators in area can change. Farmers can expect nearly double yield by adopting fertigation also than present at a lower cost of cultivation and the water requirement will be minimum as per crop type, which will result in assured irrigation in the water scarce area.

3. TERMS OF REFERENCE

Terms of Reference (ToR) for the work titled 'Development of an Application Software for the Design of Fully Automated Community Micro Irrigation System' are as follows:

3.1 OBJECTIVE

Kerala Irrigation Infrastructure Development Corporation Ltd. (KIIDC) aim to focus on collaborate with the various Engineering Colleges under APJ Abdul Kalam Technological University (initially Kerala Technological University). The objective of the EOI is to seek Engineering Colleges / Engineering College tie-up with Startups/Industries/NGOs service for the development of an application software for the design of fully automated Community Micro Irrigation system.

3.2 SCOPE OF WORK

The broad scope of the project includes the development of an application software for the design of fully automated Community Micro Irrigation System.

- ❖ Preparation of design memorandum indicating design criteria, design parameters, design assumptions, method of analysis on all components of the project.
- ❖ Community Micro Irrigation system with automation as per Government of India

guidelines based on IS Standards and suitable to the project cropping patterns and its water requirement from the available sources of water.

- ❖ Design of head unit consisting of filters, valves and fertigation units and accessories, pumping unit, valves and fittings, PVC/HDPE network (mains & sub-mains), laterals and other accessories, fertigation unit, emitting manifold, drip lines with pressure compensating drippers, water meter to measure the quantity of water to each plot and other accessories. Design of the system based on the area to be irrigated, number of shifts, multi-crops and maintaining/ensuring 1 kg/cm² pressure at drippers etc.
- ❖ Supervisory Control and Data Acquisition System (SCADA) & Automation System: Design of Programmable Logic Control (PLC) control unit for pump house and cables for connections, solenoid valve, soil – moisture sensors, pressure sensors etc.
- ❖ Additional Investigations, Observations and Studies: Carrying out additional geotechnical investigations, tests, analysis and studies including collection of other relevant data as necessary. Evaluation of results of the additional investigations, carrying out studies and analysis for the design of project components.

3.3 DESIGN

The Engineering College shall develop an application software for the design of fully automated Community Micro Irrigation system incorporating electronically controlled valves in the proposed project area (approximately 101.56 Ha), including all accessories such as primary filtration, secondary filtration, (the filters shall be suitable for groundwater or surface water according to the site condition), feeder main, in field valves, solenoid valves, pressure release valves, pressure gauges, safety accessories and drip system, fertigation equipment (venturi), main and sub-main PVC/HDPE, pressure regulator, drip manifold accessories, laterals, pressure compensating drippers, pumps and accessories like connectors, bend, coupling, elbow, end caps and other items if necessary, sensors for water content analysis, soil testing at frequency as required and automation and all materials, fittings, adhesives shall be as per the specifications and standards of BIS/International codes.

The relevant Indian standards published by BIS/International Codes on various components of micro irrigation system, shall be considered as part of this, though individual copies are not attached along with the EOI document which are available in the relevant Department/agency website.

1. Drip irrigation system components	Standards
(i) Main and sub-main pipes (a) PVC pipes (b) HDPE pipes	IS 4985: 2000 IS 4984: 1995
(ii) Lateral: High quality PE lateral in 12 mm and 16 mm	IS 12786 : 1989
(iii) Emitting pipe system	IS 13488 : 1992
(iv) Emitters/drippers (Pressure and non-pressure compensating types)	IS 13487 : 1992
(v) Micro-tubes	IS 14482 : 1998
(vi) Micro-sprayers	IS 14605 : 1998
2. Filtration system	
(i) Strainer type filters	IS 12785: 1994
(ii) Media filters	IS 14606: 1998
(iii) Hydro-cyclone filters	IS 14743: 1999
3. Fertigation	IS 14483(Part I)
(i) Fertilizer and chemical injection system part I Venturi injectors	:1997
4. Others	
(i) Pressurized irrigation equipment terminology	IS 14178: 1994
(ii) Design, installation and field evaluation of micro-irrigation system- code of practices	IS 10799: 1999
(iii) Recommended criteria for adoptability of different irrigation methods	IS 11711: 1986 IS 14791 : 2000
(iv) Prevention and treatment of blockage problem in drip irrigation system- code of practice	

Note 1: The mentioned codes and its latest amendments are applicable to this EOI. Wherever IS codes are not available, International Codes are applicable. If IS codes are available, the agency can select a product which satisfy an International Code but shall be equivalent to BIS.

Note 2: The source code and software training shall be shared with KIIDC / other agencies in this area authorized by KIIDC at no additional cost.

3.4 DATA SHARED

For the development of an application software for the design of fully automated Community Micro Irrigation system, Kerala Irrigation Infrastructure Development Corporation Ltd. (KIIDC) will provide the contour map, cadastral map, plot and farmer details, crop details, water requirements of crop, water source and supply details of the Moongilmada LIS.

3.5 DELIVERABLES

Functional and user friendly application software for the design of fully automated Community Micro Irrigation System in digital format with all supporting documents, drawings etc. both in hard copy and soft copy. Software support shall be for at least 5 (five) years.

3.6 ELIGIBILITY CRITERIA

1. KTU / KIIDC will consider proposals only from Engineering Colleges under APJ Abdul Kalam Technological University.
2. Engineering Colleges shall be permitted to tie-up with Startups / Industries / NGOs / Industry Associations etc. in areas they may not necessarily have a strong expertise. However, the EOI should be submitted by Engineering Colleges and the responsibility of timely completion / deliverables rests with the Engineering College.
3. In the case of tie-up between the Engineering Colleges and the Startups / Industries / NGOs / Industry Associations etc., the respective Startup / Industry etc. should not have been black-listed by any Government / PSU / Company or any Incubation Centre.
4. Engineering Colleges are not allowed to submit the EOI department-wise. Engineering Colleges can submit only one EOI by incorporating all their departments as a single team. Multiple EOIs from a single Engineering College shall be rejected.
5. The Engineering Colleges shall nominate a Nodal Officer for interacting with the various stakeholders associated with the project.

3.7 MILESTONES

MILESTONE	DESCRIPTION	TIME
Milestone 1	Collection relevant details required for the development of an application software for the design of fully automated Community Micro Irrigation System	5Days
Milestone 2	1 st Presentation before KIIDC Micro Irrigation team, KTU and other stakeholders; and submission of design memorandum indicating design criteria, design parameters, design assumptions, method of analysis on all components of the project.	3 Days
Milestone 3	Development of an application software for the design of fully automated Community Micro Irrigation System	30Days
Milestone 4	2 nd Presentation before KIIDC Micro Irrigation team, KTU and other stakeholders	3 Days
Milestone 5	Final presentation and submission of application software	5 Days

Note: Time can be varied by the Engineering Colleges but longer period / increased time will be given a lower score during the technical evaluation.

3.8 SELECTION CRITERIA

Selection will be based on two cover system, which consists of (i) Technical Evaluation and (ii) Financial Evaluation.

Technical evaluation will be based on the time required for the software development and with respect to the documentary evidence and physical verification of the proof submitted, in the areas as design of pipe network, automation system, sensors, software development, and presentation of the proposal before the Micro Irrigation Team / Committee of Kerala Irrigation Infrastructure Development Corporation Ltd. (KIIDC). Experience in the field of Drip Irrigation / Community Micro Irrigation will be taken as additional qualification.

Final selection will be based on the financial quote of the Engineering Colleges shortlisted after technical evaluation.

Note: Added weightage of 10 marks for the expertise in the area.

3.9 IMPORTANT DATES

DETAILS	DATE
Publishing of Expression of Interest (EOI)	21.04.2021
EOI along with relevant documents submission start date	21.04.2021
Last date for the receipt of EOI along with relevant documents	05.05.2021
Opening of EOIs	06.05.2021
Scheduled date of presentation by the Engineering Colleges	10.05.2021
Publishing the shortlisted Engineering Colleges	17.05.2021
If any date coincides with a holiday, the next working day would be considered as appropriate date.	

4. TERMS & CONDITIONS

1. Conditional EOIs will not be accepted.
2. The KTU / Managing Director, Kerala Irrigation Infrastructure Development Corporation Ltd. (KIIDC) reserves the right to accept or reject any or all applications for EOI, without assigning any reason thereof.
3. All costs and expenses incurred by applicants in any way associated with the development, preparation, and submission of responses, including but not limited to; the attendance at meetings, discussions, demonstrations, etc. and providing

any additional information required by KIIDC, will be borne entirely and exclusively by the applicants. No mobilisation advance will be paid.

4. No binding legal relationship will exist between any of the Engineering Colleges and KIIDC until execution of a contractual agreement.
5. KIIDC, if not satisfied with the work performance of the Engineering College, may terminate the Contract with 15 days' notice in advance.
6. The proposal, as well as all correspondence and documents relating to the EOI exchanged between the Engineering Colleges and KIIDC, shall be written in the English language.
7. If the application does not contain all the information required or is incomplete, the proposal is liable to be rejected. If the envelopes and packages with the EOI are not sealed and marked as required, KIIDC will assume no responsibility for the misplacement, loss, or premature opening of the EOI.
8. Any attempt by shortlisted Engineering Colleges or anyone on behalf of the applicant to influence improperly the Client in the evaluation of the response or agreement award decisions may result in the rejection of its response.
9. There will be review meetings weekly and the Engineering Colleges have to present their progress in order to assess and mitigate the difficulties, if any.

5. CONTACT DETAILS

Engineering Colleges may contact the Kerala Irrigation Infrastructure Development Corporation Ltd. (KIIDC) office during working hours between 21.04.2021 to 05.05.2021 for more information/queries.

For any information / queries:

Email ID: pmu.kiidc@gmail.com

Phone No: 0471 – 2506815 / 7306370984 (KIIDC Representative)

6. APPLICATION FORM

Interested Engineering Colleges should apply in the duly filled in application form along with details of previous projects handled/experience in the proforma attached.

7. MODE OF SUBMISSION

Completely filled in EOI in Sealed Cover (Financial), superscripting the name of work,

along with supporting documents form should be submitted by EMAIL for Cover 1 (Technical) and by SPEED POST / REGISTERED POST for Cover 2 (Financial) on or before 05:00 PM on 05.05.2021 to the following address:

MANAGING DIRECTOR

Kerala Irrigation Infrastructure Development Corporation Ltd. (KIIDC)

T.C. 84/3 (Old 36/1), NH66 Bypass Service Road, Near Eanchakkal Junction, Chackai

P.O.,Thiruvananthapuram – 695 024.

Applications submitted through any other mode will not be considered. The received EOIs will be opened on 06.05.2021 at 11:00 AM, in the presence of applicants or their authorized representatives who may choose to be present. Any EOI received by KTU / KIIDC after the deadline shall be declared late and rejected, and promptly returned unopened.

APPLICATION FORM FOR EOI

From

The Principal

Name of the Engineering College:.....

Address:.....

To

Managing Director

Kerala Irrigation Infrastructure Development Corporation Ltd. (KIIDC)

T.C. 84/3 (Old 36/1), NH66 Bypass Service Road, Near Eanchakkal Junction,

Chackai P.O., Thiruvananthapuram – 695 024.

Sir,

Sub: Expression of Interest (EOI) from Engineering Colleges for Development of an Application Software for the Design of Fully Automated Community Micro Irrigation System.

We, the undersigned, wish to take-up the work for the Development of an Application Software for the Design of Community Micro Irrigation System in accordance with your EOI No. KIIDC / 01 / 2021-22 dated 21.04.2021. We are hereby submitting our response, as per the specified format.

Our quoted rate percentage for the above subject work is%.

We hereby declare that:

1. All the information and statements made in this response are true and we accept that any misrepresentation contained in this response may lead to our disqualification by KTU / Kerala Irrigation Infrastructure Development Corporation Ltd.
2. We have no conflict of interest as stated in the EOI.
3. Our response is binding upon us and subject to any modifications resulting from the Agreement negotiations.
4. Ensure completion of project within the timelines and submission of project updates regularly
5. Ensure availability of Nodal Officer for all meetings.

We undertake, if our Proposal is accepted and the Agreement is signed, to initiate the assigned work no later than the date as specified by KIIDC. We understand that KTU / KIIDC is not bound to accept any EOI response that KTU / KIIDC receives.

Yours Sincerely,

Authorized Signature of Principal with Date

Name and of Principal:

Name of Applicant:

In the capacity of:

Address:

Contact information (phone and e-mail):

APPLICATION FOR EXPRESSION OF INTEREST

A.	Applicant's Details
Name of Applicant: (Engineering College)	
Address:	
Telephone No.:	
Email:	
Website:	
Name of the Principal:	
Details of the Principal:	
Courses Offered / Lab Facilities	
Accreditation Details:	
Any tie-up with Startup/Industry/NGOs etc.	Yes / No (if Yes, please provide their details)
Name and Address of the Startup/Industry/NGOs etc.	
Startup/Industry/NGOs etc. Staff Details, Experience, Field of Expertise etc.	
B.	Primary Contact Details
Name of the Nodal Officer:	
Designation:	
Telephone No.:	
Email:	
C.	Team Personnel
Faculties	
Post-Graduate Students	
Under-Graduate Students	
D.	Technical Details
Number of external projects taken up by the Engineering College	

Provide list of projects handled by the Engineering College in the last five years and projects currently under execution (Please attach a copy)

Note: Attach additional details and copies based on the evaluation criteria.

WORKEXPERIENCE

Summary of the projects undertaken during the past 5 (five) years
(Please attach a copy of the valid certificates)

Sl. No.	Name of the Project	Name of the Client	Start Date	Completion Date	Value of the project	Brief Description of the project

(Use additional sheets if required)

Signature:

Name:.....

Designation:.....

TECHNICAL EVALUATION CRITERIA

ENGINEERING COLLEGES		
Sl. No.	Details	Maximum Marks
1	Team personnel	30 Marks
2	Technical qualification / expertise in the related field (Design of pipe network, automation etc.)	30 Marks
3	Number of projects under taken	20 Marks
4	Time required for the software development	20 Marks
5	Presentation of the proposal before the KIIDC Micro Irrigation Team, KTU and other stakeholders	50 Marks
Total marks		150 Marks