



BHAKRA BEAS MANAGEMENT BOARD (BBMB)

Invitation of
Expression of Interest (EOI)

“HIRING OF SERVICES
for
HYDROMET INSTRUMENTATION EXPERT”

EOI Notice No.: NHP/EOI/01/2021

Invited by:

**Director/National Hydrology Project
67& 70, SLDC Residential Colony
Industrial Area Phase-I, Chandigarh. 160002
Tel:- 0172-2650570
dirhp2@bbmb.nic.in**



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Director, National Hydrology Project
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Expression of Interest (EOI)
Notice No.: NHP/EOI/01/2021

Bhakra Beas management Board, under National Hydrology Project (MoWR) invites Expression of Interest (EOI) from Hydro-metrological Instrumentation Experts meeting the evaluation criteria in attached Terms of Reference as detailed on BBMB website: www.bbmb.gov.in and NHP MOWR website: www.nhp.mowr.gov.in for **“HIRING OF SERVICES FOR HYDROMET INSTRUMENTATION EXPERT for BBMB”**.

For Further details regarding TOR, please visit the BBMB website and NHP MOWR website.

Interested Candidates may submit their Resume against EOI with requisite details through email dirhp2@bbmb.nic.in upto 15-02-2022.

EOI submitted by the Candidates will not act as a binding on the department and can be rejected without assigning any reasons.

Prospective Candidates against this EOI are also requested to regularly visit the BBMB website for updates.



**BHAKRA BEAS MANAGEMENT BOARD
EXPRESSION OF INTEREST (EOI)
Notice No.: NHP/EOI/01/2021**

**“HIRING OF SERVICES FOR
HYDROMET INSTRUMENTATION EXPERT for BBMB”**

Objectives of service

Bhakra Beas Management Board (BBMB), Chandigarh intends to hire Individual Expert on a contractual basis to impart their expertise in the field of Hydromet Instrumentation. The expert should have very good respective professional skill, project operation management, communication skill, managing technical as well as project execution, confident enough to handle conflict management in delivering assigned services on time. The expert has to perform duty of collecting and analysing data of RTDAS sites on daily basis. The expert has to provide training to the BBMB staff regarding various components involved in this field (i.e. Hands on Field Training and Classroom Training both)

Scope of service

- i. Technical advice and support for all activities envisaged in the Project Implementation Plan (PIP) of the project NHP.
- ii. Supervising the works in collaboration with field offices and NHP office regarding maintenance and upkeep of RTDAS sites.
- iii. Awareness raising, providing training to BBMB staff and capacity building
- iv. Reporting
- v. The services will be purely on temporary /contractual basis for a term of 12 months that may be reduced or increased as per requirement and mutual consent of the parties.

Scope of Work, Evaluation Criteria, expected time schedule and reporting etc. in detailed are attached in Terms of Reference (TOR).

Interested Candidates may submit the Resume at email address: dirhp2@bbmb.nic.in. The interested candidates may attach a PPT / video with resume to express his work experience and skills in the field of Hydromet Instrumentation.

Terms of Reference for
"HIRING OF SERVICES FOR HYDROMET INSTRUMENTATION
EXPERT FOR AGENCY PROJECT MONITORING UNIT, BBMB
UNDER NATIONAL HYDROLOGY PROJECT (NHP)."

1. Background

National Hydrology project is a Central Sector Scheme of Ministry of Water Resources, River Development and Ganga Rejuvenation, GoI. The total duration of project is eight years starting from 2016-17 and ending in 2023-24. Bhakra Beas Management Board (BBMB), Chandigarh is one of the implementing agencies of the project (NHP).

i. Project History

Bhakra Beas Management Board (BBMB) is one of the eight central agencies, participated in HP-II under the vertical extension component. BBMB has developed a Real Time Decision Support System for Operational Management of BBMB Reservoirs.

Bhakra Beas Management Board (BBMB) has set up Earth Receiving Station (ERS) at Chandigarh for inflow forecasting (i.e., short term 3 days and medium term 7 to 15 days) / flood forecasting for optimum utilization of Bhakra and Pong Reservoirs and Canal Network. BBMB has been the 'first mover' in the country.

Under this project, 87 no. Real Time Data Acquisition stations comprising Automatic Rain Gauge Stations, Automatic Full Climate Stations, Snow Water Equivalent, Water Level Recorders etc. had been installed in the catchment of River Sutlej and Beas by using state of the art technology. The installations are currently being upgraded through an ongoing contract and an upcoming proposal through which, new stations are also being added. The schematic arrangement of Real Time Decision Support System involves real time transmission of Hydro meteorological data through INSAT-3D at 1 hour interval to Earth Receiving Station at Chandigarh.

Real Time Data is processed using Rainfall Runoff Model, Hydro Dynamic Model, Flood Model and Water Allocation of MIKE software. The outcome/ scenario generation is further shared on NHP Dashboard accessible to all.

To carry forward the work and objectives of Hydrology Project Phase – II, MOWR Govt. of India in association with World Bank has initiated National Hydrology Project amounting to Rs.3679.7674 Crore. Under the National Hydrology Project (NHP), BBMB has been allocated Rs. 30.00 Crore for strengthening and expansion of existing Data Acquisition system (DAS), development of alternate models and technology enhancement along with capacity building in the organization to achieve better results.

ii. **Location of the Project**

Individual Expert has to work at the office space provided by APMU-NHP, BBMB at Chandigarh. Further Expert is subjected to travel anywhere in the country as and when required, specially in Haryana, Punjab, Rajasthan & Himachal Pradesh where-in the Real Time Data Acquisition System stations had been installed.

iii. **Executing Agency**

Bhakra Beas Management Board(BBMB), Chandigarh.

iv. **Need of Consultant**

Bhakra Beas Management Board (BBMB) has set up Earth Receiving Station (ERS) at Chandigarh with 87 no. Real Time Data Acquisition stations comprising Automatic Rain Gauge Stations, Automatic Full Climate Stations, Snow Water Equivalent, Water Level Recorders etc. had been installed in the catchment of River Sutlej and Beas by using state of the art technology.

Also, BBMB is in process to install 11 number new Automatic Water Level Recorder (Radar) and Upgradation of 10 no. stations (out of 87 no) installed on vital dam/reservoirs locations and Critical control water level sites on main rivers of BBMB.

BBMB needs a consultant/ Individual Expert on a contractual basis to impart their expertise in the field of Hydromet Instrumentation for upkeep and routine maintenance of already installed RTDAS sites and proper installation of new RTDAS sites.

v. **Issues to be resolved by the Consultant**

The consultant will resolve all the issues related to RTDAS sites, either already installed or new installation for proper functioning of stations and ERS so that data of these sites will be received on hourly basis at ERS.

vi. **Source of Finance**

Expenditure of this work would be met from funds allocated by Gol for the BBMB under NHP project.

vii. **Supervising Officer**

Nodal Officer i.e. Director/NHP, BBMB, Chandigarh.

2. Objectives of service

Bhakra Beas Management Board(BBMB), Chandigarh intends to hire Individual Expert on a contractual basis to impart their expertise in the field of Hydromet Instrumentation . The expert should have very good respective professional skill, project operation management, communication skill, managing technical as well as project execution, confident enough to handle conflict management in delivering assigned services on time. The expert has to perform duty of collecting and analysing data of RTDAS sites on daily basis. The expert has to provide training to the BBMB staff regarding various components involved in this field (i.e. Hands on Field Training and Classroom Training both)

3. Scope of service

- i. Technical advice and support for all activities envisaged in the Project Implementation Plan (PIP) of the project NHP.
- ii. Supervising the works in collaboration with field offices and NHP office regarding maintenance and upkeep of RTDAS sites.
- iii. Awareness raising, providing training to BBMB staff and capacity building
- iv. Reporting
- v. The services will be purely on temporary /contractual basis for a term of 12 months that may be reduced or increased as per requirement and mutual consent of the parties.

4. Scope of Work

The Expert is required to discharge the following services:

- i. Check on-site assembly of sensors at stations.
- ii. Check Configuration of the Established ERS (hardware and software) at Chandigarh. Tasks will include the configuration, and support in operation of the DAS Centre for twelve months.
- iii. Support will be provided for the operation of ERS Centre at Chandigarh. This will include providing services for software and hardware for the collection, display, and provide automatic data quality control prior to making the information available to the RT- DSS.
- iv. Support will be provided to configuration of the data logger programming and downloading devices, such as laptops to perform the function of maintaining data loggers and the data acquisition network in general.
- v. Individual Expert will identify the tools required for assembly and maintenance of RTDAS installed stations.
- vi. Individual Expert will help to prepare Standard Operating Procedure (SOP) in detail for operation and maintenance for each appropriate unit of RTDAS installed stations.
- vii. Individual Expert will list out the additional equipments requirements
Also Individual Expert will identify the list of suppliers and service providers of existing instrumentation installed at RTDAS sites and ERS centre. List of the spares required at main store & sub-stores will also be prepared by the expert.
- viii. Individual Expert will provide field training to BBMB personnel which will help BBMB for transfer of knowledge of this field to BBMB personnel. This includes operation and maintenance procedures to be carried out at the field stations. The expert will prepare training approach and methodology in coordination with supervising officer specially covering the following topics
 - a) General features and introduction of instrumentation installed on RTDAS sites and ERS centre.
 - b) Steps to be followed for Installation and maintenance of RTDAS sites and ERS Centre.
 - c) Fault finding and rectification at RTDAS sites.
 - d) Methods to be used for Preventive Maintenance and Routine Maintenance.
- ix. Individual Expert will help in stream gauging services at all sites to develop a stage-discharge relationship.
- x. Coordination with the expert employed by BBMB for developing RT- DSS for reservoir operations.

5. Expected time schedule

The total duration of the works carried out by the expert will be of 12 months from the date of signing of contract which can be extendable for another one year on the basis of performance of the expert and requirement of BBMB.

6. Criteria, sub-criteria, and point system for the evaluation are:

Maximum Points 100			
(i)	Qualification		
	a)	Graduation in the relevant field	25
	b)	Post graduate in the relevant field	5
(ii)	Work Experience		
	a)	Experience of three years in the field of instrumentation	20
	b)	Experience of more than three years in the field of instrumentation (Two points for each year; Maximum five years)	10
	c)	Special experience in Hydromet (RTDAS)	20
	d)	Work experience of working in ERS (Earth Receiving Station)	7.5
	e)	Work experience of hands on experience on ADCP	7.5
	f)	Recognition/Award/Certificate received by any institute in the field where experience is required (one mark for each certificate)	5

6.1 Method of selection

There shall be an evaluation committee which will consist of following members:-

1. Chief Engineer/Bhakra Dam, BBMB, Nangal (Chairman of Committee).
2. Dy. CAO/Field, BBMB, Chandigarh.
3. Director/NHP, BBMB, Chandigarh (Member Secretary).
4. Technical Expert (as nominated by NPMU)

Depending upon the criteria, sub-criteria and point system as detailed herein, top three candidates with highest score shall be called for interview before the Evaluation committee, after which most suitable candidate shall be selected.

7. Expert requirement

SNo	Type of expert	Quantity	Time schedule
1	Hydromet Instrumentation expert	1	12 months (from the date of signing of contract)

7.1 Qualification of Experts

SNo	Type of expert	Qualification	Experience
1	Hydromet Instrumentation expert	BE/BTech/ in Meteorology /instrumentation/ Mechanical/ Electronics and Communication	Minimum 3 years experience in instrumentation in Water resources Engineering

7.2 Major tasks and deliverables of experts

Sr No	Expert	Deliverables
1	Hydromet Instrumentation Expert	<p>Monitoring of installation of new hydromet sites under NHP and maintenance and functioning of real time data acquisition system installed under HP-II.</p> <p>Rating Curve Development/updation with the help of ADCP and other activities in which instrumentation/automation is involved.</p> <p>Need assessment of instrumentation with respect to adequacy, selection, specifications, requirement, locations etc for related activities of NHP</p> <p>Capacity building of the staff.</p> <p>Any work related to assigned job profile.</p>

8. Result Monitoring and Evaluation

- Track implementation progress against the Project Implementation Plan (PIP) and agreed annual work programs of works related to RTDAS.
- Track results against the agreed project result framework in order to achieve overall result.

9. Reporting

Summary of Reports* to be submitted by Experts

Category	Type of Report	Timing	No. of Copies
Project Evaluation	Inception Report#	Within 1 months after commencement of the Services	2
	Monthly progress Report	Every month	2
	Technical Design & drawings	As and when required	2
	Half yearly Report	Every 6 months	2
	Final Report	At the completion of the contract period	2

In the inception report the expert will record about the problems in existing system and methods to rectify the problems after visiting ERS Centre and some field stations.

*The expert shall provide both hard copy and electronic copy of each of these reports.

- Inception Report-** Expert has to submit an inception report (regarding detailed work programme including its work schedule, work plan, results of review of available data and information, relevant to the project) of entire contracted period.
- Monthly Progress Report-** Briefly summarise the activities during the month and upcoming activities for the next month.
- Technical Design & drawings:** Expert will submit technical design and drawings related to RTDAS sites and ERS centre which helps to improve the overall system as and when required.
- Half yearly Report-** Briefly summarise the activities during last six months and upcoming activities for the next six months.

- v. **Final Report-** Detailed work carried out during the entire contract period.

10. Review committee

- i. The works including various reports will be reviewed by APMU, NHP, BBMB as per the deliverables mentioned above and the timeline as per the inception report.
- ii. Further, APMU-NHP, BBMB would designate officer(s) for official correspondence and regular monitoring/review of the progress of the experts, preferably on a monthly basis. During review process, bottlenecks ,if any , would be identified and suitable remedial action/course correction would be suggested by the designate officer(s).
- iii. In case of unsatisfactory report of the expert (inefficient working style/ misbehaviour/ wrong attitude towards office staff etc), a Show cause Notice shall be given, which in extreme condition(more than two number of notice given) may result in termination of the contract.
- iv. Data leak in any form by the expert would be treated as breach of official privacy and shall be considered as a call for legal action.
- v. A proper attendance register shall be maintained in the office of Director/NHP, APMU-NHP, BBMB where expert shall mark his/her attendance on a daily basis.
- vi. In case of absence of the expert from workplace without prior information a strict action will be taken against the expert.
- vii. Expert may be called on holidays as per requirement.

11. Payment conditions

- i. The gross salary to the expert will be paid @ 80,000/- per month including all allowance except TA but excluding any type of statutory payment/taxes as applicable.
- ii. After the submission of monthly report by the expert, the Nodal Officer/NHP i.e. Director/NHP, BBMB, Chandigarh will review the progress and work done by the expert. A No Objection Certificate shall be issued by the Nodal Officer/NHP i.e. Director/NHP, BBMB, Chandigarh after which the monthly payment of each expert shall be done.
- iii. In case of an unsatisfactory report of the expert, a penalty of upto 25% shall be imposed on the month's salary
- iv. In case the expert remains absent from the office for a certain period (without prior approval from the designate officer(s)), the payment shall be proportionately deducted for the period of absence, if any, or the contract period will be

extended for absence period.

- v. No extra payment shall be done for overtime.
- vi. Expert is subjected to travel anywhere in the state or country TA/DA will be given by APMU-NHP, BBMB office as per the BBMB rules equivalent to Executive Engineer with prior approval of Nodal Officer NHP.
- vii. With prior approval from Nodal officer, NHP , air travel may be permitted to the expert on a case to case basis.

12. Facilities provided by the APMU-NHP office

- i. Office work space alongwith their proper sitting arrangements, electricity and computer system will be provided by APMU-NHP, BBMB to the expert.
- ii. Access to information will also be provided.

13. Professional and support counterpart personnel to be made available to the expert

Nil

14. Working schedule

- i. Office working hours would be from 09:00 AM to 05:00 PM including Tea and lunch breaks at par with employees on Regular establishment.
- ii. The expert will be eligible for 10 days of casual leave other than official holidays (Subject to condition) during a calendar year.
- iii. If required, the expert may be called on gazetted holidays also. No extra remuneration shall be paid for the same.

15. Provision of Bond and termination

- i. At the time of joining the duty, expert shall have to give an undertaking that he/ she will not leave this contract during the scheduled period of contract, i.e. 12 months otherwise contract may be terminated as per the terms and conditions of the contract agreement.
- ii. In any case, the contract is terminated from the expert's end without any justified reason one-month remuneration shall be penalized.