

**INVITATION FOR RESEARCH PROPOSAL UNDER THE “R&D SCHEMES OF MOP
BEING IMPLEMENTED THROUGH CPRI”**

The “R&D schemes of MoP being implemented through CPRI” is being administered by CPRI. The scheme basically aims to provide funds for carrying out need based research in power sector including solving of operational problems encountered by Indian Power System. The projects may be devised with the involvement of Industries / Utilities or ultimate beneficiary.

In the present call, proposals are invited from Academia, Industry and R&D Institutions etc. on some of the identified topic of research proposed by Utilities on the “Hydro Power Generation theme”. The topics for research is enclosed as **Annexure I**.

Project proposals are to be formulated in consultation with the Utility (the contact details of the concerned department of the Utility is provided) proposing the Research topic and in collaboration with an Industry. Project should have substantial research content and element of innovation. The objectives of the project should be clearly defined with a plan for implementation and the final outcome is expected to be a product/prototype which can be utilized by the Utility.

Proposals along with technical and financial particulars may be submitted in the prescribed format (available in the CPRI website) under the NPP scheme to:

Additional Director & HoD R&D Management Division Central Power Research Institute, Prof.Sir.C.V.Raman Road, Sadashivanagar P.B.No.8066, Bangalore -560 080	Phone - 080-22072234 E-mail: mvrao@cpri.in
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Last date of submission for the proposal is: 30th August 2022

Annexure I

THE THRUST AREAS OF RESEARCH FOR SUBMITTING THE PROPOSAL IS AS FOLLOWS:

Sl. No.	R&D Topic	Brief description of the R&D topic
1.	Detection of faults by monitoring the vibration pattern using motion/colour/video amplification techniques.	<p>Vibration of equipment has been a severe problem in Hydro Power Stations (HPS) from the very beginning of power generation. Failure of the equipment due to the vibration causes shut down, or sometimes, even a disaster in hydro power generation. These vibrations in HPS majorly contributes from cavitation, power swings, resonance, Electromotive Forces, Magneto motive Forces etc. Vibrations leads to metal fatigue & dynamic stresses, which in itself leads to larger vibrations creating positive feedback. Presently, Online vibration monitoring systems, proximity probes & sensors are utilized for vibration monitoring by analysing the processed data from these probes. Unnecessary maintenance can be avoided by catching vibrations early before they visible to the naked human eye.</p> <p>Alternate vibration condition monitoring can be explored such as motion/colour/video amplification to detect mechanical stresses & faults before their occurrences. Further, amplified data can be processes to detect vibration patterns against particular fault condition.</p>
2.	Submersible/Floating Turbines for Construction Power Requirement	Construction Power Requirement in remote project location, using Diversion Tunnel flow in under construction project area/nearby stream flows by utilizing its low head in the range of (2m to 15m)
3.	Application of IOT in Remote/Diagnostics Maintenance of Hydro project under Digitalization theme.	For Remote/Diagnostics Maintenance of Hydro project applications are required to be developed using IoT technology.

For further clarifications on the topic the following officials of SJVN may be contacted:

Designation	Name	Contact
Technical Head	Harish Kumar Sharma	harishsharma@gmail.com
Nodal Officer	Rashi Tyagi	tyagi.rashi@gmail.com

Any e-mail communication with the above officials should be copied to ed.luhri1@gmail.com and rnd@cpri.in.