GOVERNMENT OF INDIA
MINISTRY OF SCIENCE AND TECHNOLOGY
DEPARTMENT OF SCIENCE AND TECHNOLOGY
Technology Mission Division (Energy, Water & Others)

Call for Proposals
for

Optimal Water Use in Industrial Sectors-2021

(Focus Areas: Water Conservation, Water Use efficiency, Waste Water Recovery and Utilization of Residues)

1. Preamble

The water resources scenario of the country is changing fast adversely in terms of access, quantity as well as quality. The situation is further aggravated by the looming impact of climate change- which will alter the paradigm of management of water resources. Water is a critical natural resource and is being affected by increasing industrialization, urbanization, pollution, deforestation and above all climate change. Addressing the growing demand for water to satisfy our imminent needs for drinking, sanitation, irrigation and industry would alone be possible by striking a judicious balance between collection, storage, consumption and innovative reuse. Industry is one of the important users of water and the optimal use of water in the various industrial sectors is going to be more crucial in the coming decades. There are three dimensions of the industrial optimality, *namely*: (1) minimum specific water footprint in all sectors, (2) incorporation of appropriate technologies to conserve water during production and consumption of the industrial products, and (3) incorporation of the best available technologies to achieve the so-called "circular economy" approach to treatment of wastewaters and sewages as well as by enhancing reuse of water.

2. Objective of the Call

The objective of the call is to develop knowledge through R&D and demonstration and developing solutions in the context of Water Conservation, Waste Water Treatment and Water use efficiency in Industry. The focus is on Research and Development proposals, where R&D and private sector work together to design generic solutions for optimal water management in industrial sector. These research leads and solutions are expected to generic best practices for wider adoption. The demand for intervention need to be evident and established clearly in the proposal.

The present call intends to prioritize the following four challenges:

i) Technological options leading to optimal use of water in industry.

ii) Industrial waste water treatment and management.
iii) Near Zero Liquid Discharge Options for effluents (including energy savings).
iv) Balancing water demand and use utilizing technological tools.
v) Generation of energy, extraction of value products, etc. from waste water

3.Scope of the Call

The call would include following components:

3.1 <u>Research Stream</u> :

Leading to Establishment of Proof-of-Concept.

Concept: Participants should explore innovative ideas with a view to showcase the uniqueness/advantages of their idea/approach over existing alternatives and to demonstrate that their innovative idea has the ability to address a significant customer/end user need.

Eligibility: The proposals have to be submitted in the industry –institute partnership only. The proposals are to be led by faculties/ scientists working in regular position in recognized Academic Organization /Public funded R&D Institution/ Laboratories, DSIR recognized SIRO organization, state S&T councils in partnership with other academic/ R&D organisation, state line departments. The industry associations are encouraged to participate and partner. The industry should be interested to explore innovative ideas, Research and in encouraging the development of Concept. The company/industry may show willingness to involve in the project through industry attributable technical inputs and resources in-kind.

Project Cost: Not exceeding Rs. 50 lakh (indicative) where equipment cost is not expected to exceed 30% of the project cost. (There is limited funding available under this category. Only projects with novelty and innovation shall be considered)

Project duration: 2 years maximum

3.2 Technology Stream:

Leading to Lab Scale Demonstration.

Eligibility: The proposals have to be submitted in the <u>industry – institute partnership only</u>. The proposals are to be led by

faculties/ scientists working in regular position in recognized academic institutions, public funded R&D Institution/ Laboratories, DSIR recognized SIRO organization, state S&T councils in partnership with other academic/ R&D organisation, state line departments, S&T based voluntary organisation etc. Participation of industries/ start-ups and industry association is strongly recommended. The role of industry in the proposal should be tangible and it should show interest in promoting or encouraging the developed technology. The company/industry has to be willing to contribute at least 10% of the project cost.

Project Cost: Lower the better because funds are limited (maximum 50 lakh). Exceptional projects may be considered for higher funding (but a clear justification for the budget and speedy implementation potential should be evident in the proposal). The pilot scale Demonstration plant costs will be admissible based on the project requirements. However, the other equipment costs should not exceed 30% of the project costs.

Project Duration: 2 years desirable (maximum 3 years)

3.3 **Technology Validation Stream*:***

Leading to Pilot Scale Demonstration for technology in industrial setting.

Eligibility: The proposals are to be led by Industry and have to be submitted in partnership mode only by any established company/ industry along with faculties/ scientists working in regular position in recognized academic institutions, public funded R&D Institution/ Laboratories, DSIR recognized R&D organization. The applicant company should have a valid R&D recognition from DSIR and have at least 51% of its shares held by Indian promoters.

Project cost: No ceiling. The Scheme provides grants to academic/R&D institute(s), technically supporting the applicant company as a partner for success of the project, for setting up of demonstration plant, provided the partner company demonstrates willingness to validate the technology through providing tangible inputs to the project.

Project duration: 18 months maximum

4. Eligible Costs

Equipment, Prototype design & fabrication, Manpower, Work to be outsourced, Consumables, National Travel, Contingency, Miscellaneous, Overheads

5. Call Dates

Call Opening Date: 07.10.2021 (October 07, 2021)

Call Closing Date: 10.01.2022 (January 10, 2022)

6. Proposal Formulation

The applicants are encouraged to identify current & emerging challenges on the identified topic in consultation with stakeholders, especially participating industry. The relevance of the research should be based on identified need. The formulation exercise would typically involve collecting site specific conditions and assessing holistic water requirement. The strategy for sustainability of intervention post intervention also needs to be explicitly stated.

7. Criteria for evaluation

The proposals would generally be evaluated based on the following criteria. However, weight age of each of these criterions will vary depending upon the anticipated output of each stream:

i) Demand or need of proposed work
ii) Credibility Track Record and commitment of Project Team
iii) Novelty, feasibility and scientific merit of proposed work
iv) Superiority of proposed work over existing alternatives.
v) Proposed formulation with clear definition of problem proposal is going to solve, why it is important, clear articulation of methodology and delineation of roles and responsibilities.
vi) Potential, Technical, social, environmental and economic viability of proposed work.

DST at the behest of Expert Panel may introduce any other criteria considered to be critical for successful implementation of the project.

8. General Terms and Conditions for the Grant

8.1 The Institution where the project will be implemented, will assume financial and other administrative responsibilities of the project. No financial support will be provided to the industry**.**

8.2 In case of multi-institutional project, the Principal Investigator has to obtain formal agreement from the collaborating Institutions/Scientists.

8.3 The manpower recruited for the project should be paid as per the rules of the institute and guidelines of the Government of India (**OM. No. SR/S9/Z-08/2018 dated 30.01.2019 and SR/S9/Z-05/2019 dated 10.07.2020)**. The posts which are not covered under the guidelines but permissible under projects at host institute are also permitted.

8.4 The temporary staff employed for the project by the organization is not treated as employees of Government of India and the deployment of such staff at the time of termination of the project will not be the concern / responsibility of the Government of India.

8.5 It is the policy of DST to maximize the use of equipment. In this light, investigator shall permit the use of spare or idle capacities of equipment procured under the project by bona fide users (research workers in other DST funded projects or other projects of the institute).

8.6 All the assets including equipment acquired and prototypes fabricated from the grant will be the property of Government of India and should not be disposed of, or utilized for purposes other than those for which the grant has been sanctioned, without the prior sanction of the Department of Science &Technology.

8.7 The Principal Investigator/ Organization will be required to furnish progress report every six months on the progress made on all aspects of the project including expenditure incurred on various approved items during the period.

8.8 The Comptroller and Auditor General will have the right to access to the books and accounts of the organization for Grants received from the Government.

8.9 The organization would maintain separate account for the project. The grant should be kept in an interest earning bank account and the interest earned should be reported to the Department of Science & Technology. The grantee organization will have to enter & upload the Utilization Certificate in the PFMS portal besides sending it in physical form to this Division. The subsequent/final installment will be released only after confirmation of the acceptance of the UC by the Division and entry of previous Utilization Certificate in the PFMS.

8.10 The grantee organization will maintain separate audited account for the project and the entire amount of grant will be kept in an interest bearing bank

account. For Grants released during F.Y. 2017-18 and onwards, all interests and other earnings against released Grant shall be remitted to Consolidated Fund of India (through Non-Tax Receipt Portal (NTRP), i.e. www.bharatkosh.gov.in), immediately after finalization of accounts, as it shall not be adjusted towards future release of Grant. A certificate to this effect shall have to be submitted along with Statement of Expenditure/ Utilization Certificate for considering subsequent release of Grant/ Closure of Project accounts.

8.11 Grant can be terminated by DST at any stage if it is convinced that the Grant has not been properly utilized or appropriate progress is not being made.

8.12 If the Principal Investigator wishes to leave the organization where the project is based, the organization/investigator will inform the same to DST and with its consultation evolve steps to ensure successful completion of the project, before relieving the Principal Investigator. The Investigator should submit three copies of complete and detailed report of the work done by them on the project before leaving the organization.

8.13 Sale proceeds, if any, of the components, prototypes, pilot plants etc. fabricated as a result of the development of the project arising directly from funds granted by the Department of Science & Technology shall be remitted to the Government of India. The Government of India, may, at its discretion allow a portion of such receipt to be retained by the organization.

8.14 The know-how generated from the project would be the property of the Government of India and any receipts by way of sale of know-how, utilization of know-how for production, royalties etc. shall belong to the Government of India. The Government of India, may, at its discretion, allow a portion of such receipts to be retained by the organization.

8.15 The Principal Investigator / organization will prepare all the documents that would be required for the transfer of know-how to the production agency/agencies and submit them to DST as and when required. The organization will be responsible to transfer the know-how developed to the production agency/ agencies and supply all the needed information to the production agency/ agencies as and when required.

Monitoring of the Project

Implementation of the projects will be monitored regularly through Progress Reports, Financial Statements and Committee of Experts in Group review meetings and onsite as well. DST approved committee may visit the organization periodically to review the progress of the work being carried out

and suggest suitable measures to ensure realization of the objectives of the project.

Fund support under non -recurring grant for required equipment's will be given only if the same facility is not available in the PI' institution or nearby institutions. The laboratories and institutions should be well-equipped and preferably have all the essential equipment and infrastructure for the prototype development. No major infrastructure will be funded.

9. Proposal Format and Submission:

Proposals are accepted **only online** at e-PMS under Technology Mission Division in the prescribed format till office time on closing date of proposal. Proposal format can be downloaded from Website https://onlinedst.gov.in/Login.aspx . Go to: Schemes And Formats: Technology Mission Division: Optimal Water Use in Industrial Sectors-2021: Download Call format. The proposal in any other formats will be summarily rejected. Kindly comply with the instructions as mentioned below during online submission of proposal:

a) Under **Coordinator** tab: In **Co-coordinator List**- Please ensure to mention the details of all the persons involved in the project including collaborator.

b) Under **Suggested Referees** tab: At least 3 referees are mandatory to be mentioned

c) Under **Ongoing projects** tab: Declared those projects related to the Principle investigator**.**

d) Under **Submission** tab: **Certificate from PI (PDF Max 800 Kb)**: Please ensure certificate of all PI's and Co-PI's in the project team should be merged together and uploaded as a single pdf document.

e) Under **Submission** tab: **Endorsement from Head of Institute (PDF Max 800 Kb)**: Please ensure that certificate from relevant institutes (if any) of all PI's, Co-PI's, collaborators, Letter of Intent from beneficiary (as applicable for selected stream) of project should be merged together and uploaded as a single pdf document.

f. Nomenclature for soft copy of Project proposal document: (PI first name –Institute -City) eg; if PI name is Dr. Anil Kumar and his affiliation is National Institute of Technology, Raipur then soft copy file name is Anil-NIT-Raipur.docx and Anil-NIT-Raipur.pdf .

It is advised to submit the proposal at the earliest and not wait till last moment, as submission of proposal on the closing day of call may hamper due to congestion on server.

Two (2) hardcopies of uploaded proposal should also be sent to Dr. G.V Raghunath Reddy, Scientist 'F', Technology Mission Division (EWO), Department of Science & Technology (DST), Technology Bhavan, New Mehrauli Road, New Delhi- 110016 by

Speed Post and reach before the closing date of the call. The envelope should be superscribed with the **"Call for proposals for Optimum Water Use in Industrial Sectors-2021".**

For online submission problem: Contact Portal Help-Desk Executive at 011-26590604/384 (Preferably from 03:00 PM to 05:00 PM)

For any other Information: Contact Programme officers: Dr. G.V Raghunath Reddy, Scientist 'F', Technology Mission Division (EWO), Department of Science & Technology (DST), Technology Bhavan, New Mehrauli Road, New Delhi- 110016 (Phones 011-26590604 or 011-26526229).

Note

Instructions to Project Investigator (PI)

- ❖ PI need to submit consolidated budget table for all the collaborating partners.
- ❖ They also need to submit detailed budget table for each of the collaborating partners.
- ❖ Details and Justification of proposed expenditure should be provided for each head.
- ❖ All figures must be in Indian Rupees.
- ❖ Save the complete application form (consolidated proposal and other requisite information) as a single pdf file and upload it in e-PMS (https://onlinedst.gov.in/).
- ❖ PI is requested to kindly Note the TPN Number, which is auto generated after uploading the proposal on e-PMS portal.