**Draft TOR for**

 **Research Project on**

**Water Audit and Water Use Efficiency**

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| **Title :** | **Study of principal, processes, and procedures to conduct water audit in water utility and estimation of water use efficiency** |
| **Sectional Committee :**  | **Drinking Water Supply, Wastewater and Stormwater Systems and Services Sectional Committee SSD 14** |
| **Supervisor :** | **Member Secretary of SSD 14** |
| **Duty Station :** | **All over India** |
| **Duration :** | **3 Months** |

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| **Introduction:**Drinking Water Supply, Wastewater and Stormwater Systems and Services Sectional Committee SSD 14 of BIS has identified the subject of Water Audit and Water Use Efficiency to formulate an Indian Standard. In order to take a holistic view of the subject and to formulate an indigenous Indian Standard, a detailed study of already developed principal, processes and procedures for conducting water audits in different top-tier water utilities in the country and their methods for estimation of water use, is required to be conducted. The purpose of this research and development (R&D) project is to conduct a comprehensive study on water audit and water use efficiency in water utilities, with the objective of formulating standards for sustainable water management, reduction of water losses, and optimization of water use. The project aims to develop guidelines, methodologies, and benchmarks that will serve as the basis for standard formulation in the field of water audit and water use efficiency.  |
| **Proposed Scope of the Project**A comprehensive study of existing literature, research, and case studies related to water audit and water use efficiency in water utilities of the country to analyse data and assess the current practices, methodologies, and technologies used in water utilities for water audit and water use efficiency and prepare a comprehensive report documenting the research findings for the formulation of Indian Standards on water audit and water use efficiency in water utilities, considering best practices and technological advancements. |
| **Objective** The primary objectives of the project are as follows:a. Assess the current practices and methodologies of water audit in water utilities.b. Identify the key challenges and opportunities for improving water use efficiency and reducing water losses.c. Develop a framework for conducting water audits in water utilities, including data collection, analysis, and reporting requirements.d. Establish performance indicators and metrics for evaluating water use efficiency and water losses in water utilities.e. Formulate standards and guidelines for water audit and water use efficiency in water utilities, encompassing best practices and technological advancements.f. Conduct pilot studies in selected water utilities to validate the developed standards.g. Facilitate the adoption and implementation of the developed standards by water utilities and relevant stakeholders. |
| **Criteria for Identification of Expert Organisation to Conduct Research Work**1. Infrastructure for conducting research work.
2. Capabilities, experience and competence in the field of Water Audit and Water Use Efficiency.
3. Expert organization shall be a member of the Sectional Committee.
4. Approval of Sectional Committee and Screening Committee of BIS based on the above and BIS norms.
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| **Deliverables**In consultation with BIS, the expert organization willing to take up the research should focus on the following deliverables and data to be incorporated into the standard: The project deliverables include, but are not limited to, the following:a. A framework for conducting water audits in water utilities, including data collection, analysis, and reporting requirements.b. key performance indicators (KPIs) and metrics for evaluating water use efficiency and water losses in water utilities.c. Recommendations for the adoption and implementation of the developed standards by water utilities and relevant stakeholders.d. the current practices, methodologies, and technologies used in water utilities for water audit and water use efficiency.e. A final project report summarizing the research findings, methodologies, and recommended standards and guidelines.The expert organization shall share the methodology for research and study on the above issues while submitting a proposal to the Drinking Water Supply, Wastewater and Stormwater Systems and Services Sectional Committee, SSD 14. A format for proposal is attached for guidance. After the approval of SSD 14, the proposal of organisation would be put up to internal committee of BIS for final approval. |

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