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|  | | ISO FORM 4 |
| **NEW WORK ITEM PROPOSAL (NP)** |
| **DATE OF CIRCULATION:** Click here to enter a date. | | **CLOSING DATE FOR VOTING:** Click here to enter a date. |
| **PROPOSER:**  ISO member body:  SAC  Committee, liaison or other:  Click or tap here to enter text. | | **REFERENCE NUMBER:** Click or tap here to enter text.  **WITHIN EXISTING COMMITTEE**  Document Number: ISO/TC 282  Committee Secretariat: SAC  **PROPOSAL FOR A NEW PC** |
| A proposal for a new work item within the scope of an existing committee shall be submitted to the secretariat of that committee.  A proposal for a new project committee shall be submitted to the Central Secretariat, which will process the proposal in accordance with ISO/IEC Directives, Part 1,[Clause 2.3](https://www.iso.org/resources/publicly-available-resources.html?t=712usHn2eATZXjtj0c3FIJ16gvWZXP-_fykOV8H1WAolmA84oAGBwILzOVFUEc46&view=documents" \l "section-isodocuments-top).  Guidelines for proposing and justifying new work items or new fields of technical activity (Project Committee) are given in ISO/IEC Directives, Part 1, [Annex C](https://www.iso.org/resources/publicly-available-resources.html?t=712usHn2eATZXjtj0c3FIJ16gvWZXP-_fykOV8H1WAolmA84oAGBwILzOVFUEc46&view=documents" \l "section-isodocuments-top).  **IMPORTANT NOTE:** Proposals without adequate justification and supporting information risk rejection or referral to the originator. | | |
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| **PROPOSAL**  (to be completed by the proposer, following discussion with committee leadership if appropriate) | | |
| English title | | |
| Water reuse-Guideline for Water Balance Analysis | | |
| French title | | |
| Click or tap here to enter text.  (Please see ISO/IEC Directives, Part 1, [Annex C](https://www.iso.org/resources/publicly-available-resources.html?t=712usHn2eATZXjtj0c3FIJ16gvWZXP-_fykOV8H1WAolmA84oAGBwILzOVFUEc46&view=documents" \l "section-isodocuments-top), Clause C.4.2).  In case of amendment, revision or a new part of an existing document, please include the reference number and current title | | |
| **SCOPE**  (Please see ISO/IEC Directives, Part 1, [Annex C](https://www.iso.org/resources/publicly-available-resources.html?t=712usHn2eATZXjtj0c3FIJ16gvWZXP-_fykOV8H1WAolmA84oAGBwILzOVFUEc46&view=documents" \l "section-isodocuments-top), Clause C.4.3) | | |
| The proposal provides technical guidelines for water balance analysis of water-use organizations or systems, which refers to the systematic measurement, statistics, and calculation of water quantity in water-use organizations or systems. Based on the principle of water quantity and quality balance, it analyzes and identifies problems, and puts forward suggestions for continuous improvement of water cascade reuse. This document specifies the water balance diagrams and equations, as well as the procedures and methods. This document is applicable to organizations or systems in all areas of industry, services, and agriculture, including, but not limited to, organizations such as parks, enterprises, commercial complexes, and hotels, as well as systems for circulating cooling water, irrigation, and water reuse. This document ensures the cascade application of reused water in all links through effective water balance analysis, improves resource utilization efficiency, and minimizes water waste. | | |
| **PURPOSE AND JUSTIFICATION**  (Please see ISO/IEC Directives, Part 1, [Annex C](https://www.iso.org/resources/publicly-available-resources.html?t=712usHn2eATZXjtj0c3FIJ16gvWZXP-_fykOV8H1WAolmA84oAGBwILzOVFUEc46&view=documents" \l "section-isodocuments-top) and additional guidance on justification statements in the brochure [Guidance on New Work](https://www.iso.org/publication/PUB100438.html)) | | |
| Water scarcity has become an increasingly serious global problem. According to United Nations data, more than 40% of the global population faces water scarcity, and this proportion is expected to increase further with climate change and the continuous rise in global temperatures. To address this challenge, the United Nations Sustainable Development Goals (SDGs) have set Targets 6.3 and 6.4, aiming to substantially increasing recycling and increase water-use efficiency. Additionally, Target 6.5 emphasizes the crucial role of implementing integrated water resources management at all levels. Countries have also taken proactive actions. The European Union has established a unified water resources governance framework through the Water Framework Directive to promote the sustainable use of water resources. Australia's national water resources management policies and actions aim to optimize water resource allocation through measures such as market mechanisms, improving water efficiency, and water stewardship. These initiatives not only demonstrate the global common resolve in water conservation but also provide valuable experience for future water stewardship. Internationally, water-related standards or documents mainly include: ISO 14046:2014 Environmental management-Water footprint-Principles, requirements and guidelines, which provides an international standard for water footprint assessment and guides organizations on how to quantify and evaluate water resource use and its potential impacts throughout the life cycle of their activities, products, or services. The AWWA M36 Manual focuses on water audit and leakage control, primarily targeting water management personnel and professionals. Traditional water conservation has primarily focused on direct water saving, that is, reducing overall water demand by decreasing water consumption. However, as global water scarcity becomes increasingly severe, relying solely on direct water saving can no longer meet the needs of future sustainable development. Therefore, enhancing water reuse has become another important strategy in current water stewardship. In this context, water balance analysis, as a scientific assessment and optimization tool, can help identify and optimize water use efficiency, serving as a crucial means for water reuse. By accurately measuring water input, use, and output, it ensures efficient water flow without waste within the entire organization or system, providing data support for organizational or system optimization and revealing potential water reuse pathways and water loss issues. According to the water quality requirements of different links, reclaimed water can be reused through direct reuse, simple treatment reuse, or advanced treatment reuse to minimize demand for fresh water. However, there is currently a lack of unified technical standards and operational specifications for water balance analysis techniques internationally. This situation has led to significant differences in water efficiency assessment and improvement across regions and enterprises, affecting the comprehensive optimization and sustainable development of water-use efficiency. In China, three national standards related to water balance analysis, such as GB/T 12452-2022 General principles of water balance test, have been issued, and extensive demonstration applications have been carried out in service industries such as hotels and schools, as well as in industrial fields such as cement and steel. Moreover, water reuse standards like GB/T 42866-2023 Technical guide for the treatment and reuse of coal chemical wastewater have taken water balance analysis as an important basis, successfully constructing a mature technical system for water balance analysis. Meanwhile, through the promotion of standards and the development of related systems, the standardized and intelligent application of water balance analysis techniques has been further advanced, improving water efficiency in various industries. The water balance analysis technology is not only suitable in China but also has high international promotion value. Therefore, it is planned to propose an international standard proposal based on the TC282 framework by integrating relevant Chinese standards, aiming to provide referable technical specifications for global industries. The formulation of this proposal will further promote countries to enhance water-use efficiency, promote the rational and efficient use and protection of water resources, and support the broad goals of global sustainable development. Additionally, the implementation of international standards will enhance the global capacity to collectively address water resource challenges. (Please use this field or attach an annex) | | |
| **PROPOSED PROJECT LEADER** (name and email address) | | |
| Dr. BAI Xue, baixue@cnis.ac.cn | | |
| **PROPOSER** (including contact information of the proposer’s representative) | | |
| Dr. XIAO Han Director General, Department of Standards Innovative Management, SAMR/SAC [sac\_82261017@126.com](mailto:sac_82261017@126.com_x0003_) | | |
|  | **The proposer confirms that this proposal has been drafted in compliance with ISO/IEC Directives, Part 1, Annex C** | |
| **PROJECT MANAGEMENT**  Preferred document   |  |  | | --- | --- | |  | International Standard | |  | Technical Specification | |  | Publicly Available Specification\* |   \* While a formal NP ballot is not required (no eForm04), the NP form may provide useful information for the committee P-members to consider when deciding to initiate a Publicly Available Specification.  Proposed Standard Development Track (SDT – to be discussed by the proposer with the committee manager or ISO/CS)  18 months  24 months  36 months  Proposed date for first meeting: 2025-12-01  Proposed TARGET dates for key milestones   * Circulation of 1st Working Draft (if any) to experts: 2025-12-01 * Committee Draft consultation (if any): 2027-05-01 * DIS submission\*: 2028-12-01 * Publication\*: 2029-01-01   \* Target Dates for DIS submission and Publication should be set a few weeks ahead of the limit dates automatically determined when selecting the SDT.  It is proposed that this DOCUMENT will be developed by:   |  |  | | --- | --- | |  | An existing Working Group, add title Click or tap here to enter text. | |  | A new Working Group Click or tap here to enter text.  *(Note that the establishment of a new Working Group requires approval by the parent committee by a resolution)* | |  | The TC/SC directly | |  | To be determined | |  | This proposal relates to a new ISO document | |  |  | |  | This proposal relates to the adoption, as an active project, of an item currently registered as a Preliminary Work Item | |  | This proposal relates to the re-establishment of a cancelled project as an active project | |  | Other: Click or tap here to enter text. |   Additional guidance on project management is available [here](https://connect.iso.org/display/standards/Project+management). | | |
| **PREPARATORY WORK**   |  |  | | --- | --- | |  | A draft is attached | |  | An existing document serving as the initial basis is attached | |  | An outline is attached | |  | Note: at minimum an outline of the proposed document is required |   The proposer is prepared to undertake the preparatory work required:  Yes  No  If a draft is attached to this proposal:  Please select from one of the following options:   |  |  | | --- | --- | |  | The draft document can be registered at Preparatory stage (WD – stage 20.00) | |  | The draft document can be registered at Committee stage (CD – stage 30.00) | |  | The draft document can be registered at enquiry stage (DIS – stage 40.00) | |  |  | |  | If the attached document is copyrighted or includes copyrighted content, the proposer confirms that copyright permission has been granted for ISO to use this content in compliance with [clause 2.13](https://www.iso.org/resources/publicly-available-resources.html?t=712usHn2eATZXjtj0c3FIJ16gvWZXP-_fykOV8H1WAolmA84oAGBwILzOVFUEc46&view=documents" \l "section-isodocuments-top) of ISO/IEC Directives, Part 1 (see also the [Declaration on copyright](https://www.iso.org/declaration-for-participants-in-iso-activities.html)). | | | |
| **RELATION OF THE PROPOSAL TO EXISTING INTERNATIONAL STANDARDS AND ON-GOING STANDARDIZATION WORK**  To the best of your knowledge, has this or a similar proposal been submitted to another standards development organization or to another ISO committee?  Yes  No  If Yes, please specify which one(s) Click or tap here to enter text.  The proposer has checked whether the proposed scope of this new project overlaps with the scope of any existing ISO project  If an overlap or the potential for overlap is identified, the proposer and the leaders of the existing project have discussed on:   1. modification/restriction of the scope of the proposal to avoid overlapping, 2. potential modification/restriction of the scope of the existing project to avoid overlapping.   If agreement with parties responsible for existing project(s) has not been reached, please explain why the proposal should be approved Click or tap here to enter text.  Has a proposal on this subject already been submitted within an existing committee and rejected? If so, what were the reasons for rejection? Click or tap here to enter text.  This project may require possible joint/parallel work with  IEC (please specify the committee) Click or tap here to enter text.  CEN (please specify the committee) Click or tap here to enter text.  Other (please specify) Click or tap here to enter text. | | |
| **Select any UN Sustainable Development Goals (SDGs) that this proposed project would support** (information about SDGs, is available at [www.iso.org/SDGs](http://www.iso.org/SDGs)) and explain how the proposed document relates to the identified SDG(s) and their associated targets.  GOAL 1: No Poverty  Click or tap here to enter text.  GOAL 2: Zero Hunger  Click or tap here to enter text.  GOAL 3: Good Health and Well-being  Click or tap here to enter text.  GOAL 4: Quality Education  Click or tap here to enter text.  GOAL 5: Gender Equality  Click or tap here to enter text.  GOAL 6: Clean Water and Sanitation  6.3 By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally  6.4 By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity  6.5 By 2030, implement integrated water resources management at all levels, including through transboundary cooperation as appropriate  GOAL 7: Affordable and Clean Energy  Click or tap here to enter text.  GOAL 8: Decent Work and Economic Growth  Click or tap here to enter text.  GOAL 9: Industry, Innovation and Infrastructure  Click or tap here to enter text.  GOAL 10: Reduced Inequality  Click or tap here to enter text.  GOAL 11: Sustainable Cities and Communities  Click or tap here to enter text.  GOAL 12: Responsible Consumption and Production  Click or tap here to enter text.  GOAL 13: Climate Action  Click or tap here to enter text.  GOAL 14: Life Below Water  Click or tap here to enter text.  GOAL 15: Life on Land  Click or tap here to enter text.  GOAL 16: Peace, Justice and strong institutions  Click or tap here to enter text.  GOAL 17: Partnerships for the goals  Click or tap here to enter text.  No SDG concerned | | |
| **Identification and description of relevant affected stakeholder categories**  (Please see [ISO CONNECT](https://connect.iso.org/display/standards/Stakeholders+and+liaisons))   |  |  | | --- | --- | |  | Benefits/Impacts/Examples | | Industry and commerce – large industry | This standard will provide large-scale industries with scientific and standardized technical methods for water balance analysis. Enterprises can significantly reduce fresh water demand, optimize water-use efficiency, and mitigate environmental burdens. The application of quality-based treatment and hierarchical reuse enables rational classification and treatment of water resources according to different water quality requirements, and facilitates reuse in the most appropriate manner. For instance, industrial water, domestic water, and cleaning water are subjected to different levels of treatment, maximizing the recycling rate of water resources. This not only helps enhance enterprises' environmental responsibility and social image but also strengthens their market competitiveness. | | Industry and commerce – SMEs | For SMEs, this standard offers a standardized approach to water stewardship, improving water reuse efficiency, optimizing water use, reducing resource waste, and lowering operational costs. Additionally, it helps enterprises improve their sustainability capacity and enhances their sense of social responsibility. | | Government | The standard provides technical support for governments in addressing urban water resource shortages, helping strengthen water stewardship, ensuring that all industries follow relevant standards in water use, optimizing water resource allocation, and promoting the implementation of water-saving policies. In terms of urban water use, the quality-based water reuse system can effectively reduce water resource consumption, promote the sustainable utilization of urban water resources, and decrease the demand for fresh water. Especially in water-scarce areas, this model of quality-based treatment and reuse will help ensure the sustainability and fairness of public resources. | | Consumers | The implementation of this standard can promote water-saving and emission-reduction efforts in enterprises, improve product quality and environmental standards, and ultimately provide consumers with more environmentally friendly and sustainable products and services, thereby improving quality of life and consumer experience. | | Labour | The standard will also assist practitioners in improving their professional skills and water-saving awareness through standardized operations, ensuring compliance with water resource utilization and reducing resource waste. | | Academic and research bodies | Academic research institutions can utilize this standard to establish a standardized research framework, further exploring water stewardship, water-saving technologies, and their applications across industries. This provides foundational data and theoretical support for scientific research, promoting the development of relevant disciplines. | | Standards application businesses | Enterprises applying the standard can enhance the scientificity and transparency of water stewardship, improve the standardization level of products and services, ensure compliance with domestic and international environmental standards, enhance brand image, and attract more investment and customers. By implementing water reuse and quality-based treatment measures, enterprises not only excel in environmental protection but also reduce operating costs by minimizing resource consumption, thereby strengthening their market competitiveness. | | Non-governmental organizations | Non-governmental organizations can use this standard to encourage businesses and governments to adopt more effective water reuse and water efficiency measures, promote the rational use and protection of water resources, improve water environments, strengthen environmental awareness among the public and enterprises, and advance the achievement of sustainable development goals. | | Other (please specify) | Click or tap here to enter text. | |  |  | | | |
| **Listing of countries where the subject of the proposal is important for their national commercial interests** (Please see ISO/IEC Directives, Part 1, [Annex C](https://www.iso.org/resources/publicly-available-resources.html?t=712usHn2eATZXjtj0c3FIJ16gvWZXP-_fykOV8H1WAolmA84oAGBwILzOVFUEc46&view=documents" \l "section-isodocuments-top), Clause C.4.8)  Click or tap here to enter text. | | |
| **Listing of external international organizations or internal parties (other ISO and/or IEC committees) to be engaged in this work** (Please see ISO/IEC Directives, part 1, [Annex C](https://www.iso.org/resources/publicly-available-resources.html?t=712usHn2eATZXjtj0c3FIJ16gvWZXP-_fykOV8H1WAolmA84oAGBwILzOVFUEc46&view=documents" \l "section-isodocuments-top), Clause C.4.9)  Click or tap here to enter text. | | |
| **Listing of relevant documents (such as standards and regulations) at international, regional and national level** (Please see ISO/IEC Directives, Part 1, [Annex C](https://www.iso.org/resources/publicly-available-resources.html?t=712usHn2eATZXjtj0c3FIJ16gvWZXP-_fykOV8H1WAolmA84oAGBwILzOVFUEc46&view=documents" \l "section-isodocuments-top), Clause C.4.6)  (1)ISO 14046:2014 - Environmental management - Water footprint - Principles, requirements and guidelines (2)GB/T 12452-2022 - General principles of water balance test (3)GB/T 36536-2018 - Test method of water balance in cement production enterprises (4)GB/T 42031-2022 - Drawing method of water balance diagram for water-use organization (5)AWWA M36 Manual - Water Audits and Loss Control Programs | | |
| **ADDITIONAL INFORMATION**  **Maintenance Agencies (MAs) and Registration Authorities (RAs)**   |  |  | | --- | --- | |  | This proposal requires the designation of a maintenance agency. If so, please identify the potential candidate: | |  | Click or tap here to enter text. | |  | This proposal requires the designation of a registration authority. If so, please identify the potential candidate | |  | Click or tap here to enter text. |   NOTE: Selection and appointment of the MA or RA are subject to the procedure outlined in ISO/IEC Directives, Part 1, [Annex G](https://www.iso.org/resources/publicly-available-resources.html?t=712usHn2eATZXjtj0c3FIJ16gvWZXP-_fykOV8H1WAolmA84oAGBwILzOVFUEc46&view=documents" \l "section-isodocuments-top) and [Annex H](https://www.iso.org/resources/publicly-available-resources.html?t=712usHn2eATZXjtj0c3FIJ16gvWZXP-_fykOV8H1WAolmA84oAGBwILzOVFUEc46&view=documents" \l "section-isodocuments-top).  **Known patented Items** (Please see ISO/IEC Directives, Part 1, [Clause 2.14](https://www.iso.org/resources/publicly-available-resources.html?t=712usHn2eATZXjtj0c3FIJ16gvWZXP-_fykOV8H1WAolmA84oAGBwILzOVFUEc46&view=documents" \l "section-isodocuments-top))  Yes  No  If Yes, provide full information as an annex  **Is this proposal for an ISO management System Standard (MSS)?**  Yes  No  Note: If yes, this proposal must have an accompanying justification study. Please see the Consolidated Supplement to the ISO/IEC Directives, Part 1, [Annex SL](https://www.iso.org/resources/publicly-available-resources.html?t=712usHn2eATZXjtj0c3FIJ16gvWZXP-_fykOV8H1WAolmA84oAGBwILzOVFUEc46&view=documents" \l "section-isodocuments-top) or [Annex JG](https://www.iso.org/resources/publicly-available-resources.html?t=712usHn2eATZXjtj0c3FIJ16gvWZXP-_fykOV8H1WAolmA84oAGBwILzOVFUEc46&view=documents" \l "section-isodocuments-top) | | |