



जल शक्ति मंत्रालय
MINISTRY OF
JAL SHAKTI



वस्त्र मंत्रालय
MINISTRY OF
TEXTILES



CONCEPT NOTE

Title: Net Zero Possibilities in Textile Wastewater Treatment

Date: 8th February 2024

Time: 2:00-3:30pm

Venue: Gulmohar Hall, India Habitat Centre, Lodhi Road, New Delhi

The World Sustainable Development Summit (WSDS) (<https://wsds.teriin.org/2024/>) is the annual flagship event organized by The Energy and Resources Institute (TERI). Instituted in 2001, the Summit series has a legacy of over two decades for making 'sustainable development' a globally shared goal. The only independently convened international Summit on sustainable development and environment, based in the Global South, WSDS strives to provide long-term solutions for the benefit of global communities by assembling the world's most enlightened leaders and thinkers on a single platform. The 23rd edition of the annual flagship event of The Energy and Resources Institute (TERI)—the World Sustainable Development Summit (WSDS)—will be held from 7-9 February 2024 in New Delhi. The Summit deliberations will focus on the umbrella theme: **Leadership for Sustainable Development and Climate Justice**.

Within the WSDS framework, various Divisions of Teri organize **Thematic Tracks** where they showcase their successful projects with key findings and based upon these, come up with release of Policy Briefs, Discussion Paper etc. In this regard, the NMCG-TERI Centre of Excellence on Water Reuse (<http://nmcgtericoe-wr.in>) is organizing a thematic track which will present the outcomes of the successful project executed under the Namami Gange National Mission, funded by the National Mission for Clean Ganga (NMCG) <http://nmcg.nic.in> Ministry of Jal Shakti (MoJS), Govt. of India. This recently completed Phase I of the project involved the successful pilot demonstration of TADOX[®] technology at 20,000 Liters per day (20 KLD) capacity TADOX[®] plant treating effluent from the Textile Common Effluent Treatment Plant (CETP) in Rooma Industrial Area, Kanpur, UP where 11 units discharge their effluent. This is **1st** of

its kind demonstration in the World of UV-Photocatalysis based Advanced Oxidation Technology for treatment of Textile Effluent in a CETP at 20 KLD capacity.

Notably, the system has effectively reduced Chemical Oxygen Demand (COD) from 990 to 55 mg/L and Biochemical Oxygen Demand (BOD) from 312 to 11 mg/l, adhering to strict compliance norms with significant reductions in key pollutants such as TSS by 97.8%, Oil and Grease by 92.3%, COD by 94.5%, BOD by 96.5%, and color intensity by 98.2%. This has enabled biological treatment system shock proof with improved biodegradability. Hence TADOX® Technology is proposed to be implemented as a retrofittable solution at pre-biological treatment stage of the existing 1.55 MLD CETP, which is expected to reduce load on RO and tertiary treatment and make Zero Liquid Discharge (ZLD) compliance of CPCB, Govt. of India, archivable, sustainable, economically viable, acceptable and compliant.

TADOX®'s integration at pre-biological stage together with ZLD systems is expected to enhanced treatment efficacy and environmental sustainability, as evidenced by Life Cycle Assessment (LCA) studies, highlighted a substantial reduction in Global Warming Potential (GWP), with CO₂ emissions per cubic meter of treated water dropping from 34.7 t CO₂e to 23.6 tCO₂e/m³. The potential integration of renewable energy sources like solar power with TADOX® presents an avenue to further reduce operational costs by up to 40%, steering the technology towards a net-zero emission target. This strategic energy integration significantly lowers the carbon footprint, aligning wastewater treatment with global sustainability goals.

This thematic track thus aims to bring various **stakeholders** together like R&D Organization and Think Tanks like **TERI** where the technology was developed, **NMCG, Ministry of Jal Shakti, GoI** which selected the technology for River cleaning National Programme like Namami Gange and financially supported Pilot scale demonstration in field, **Ministry of Textiles, GoI**, who is the ultimate beneficiary of the technology, while **Central and State Pollution Control Board(s)** are the regulators and **Industry partners** from Textile and Dyeing Sector. Such an engagement is expected to lead to an in-depth discussion, knowledge sharing, and practical insights related to the implementation of innovative approaches and advanced technologies such as TADOX® in order to meet the environmental safety norms, regulatory compliances like the ZLD and textile industry specific requirements for the newer and upcoming Textile Parks and CETPs.

Objective of having this Thematic Track:

- To share the findings of TADOX® technology implementation at a pilot scale in textile and dyeing sector under “Namami Gange” National mission.
- To facilitate in-depth discussions, knowledge sharing, and practical insights related to the integration of innovative approaches and advanced technologies such as TADOX® through a Panel Discussion.
- To release the Policy Brief on TADOX®, offering policy recommendations for treating textile and dyeing wastewater, achieving Zero Liquid Discharge (ZLD), and enhancing water reuse based on the pilot demonstration study.

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