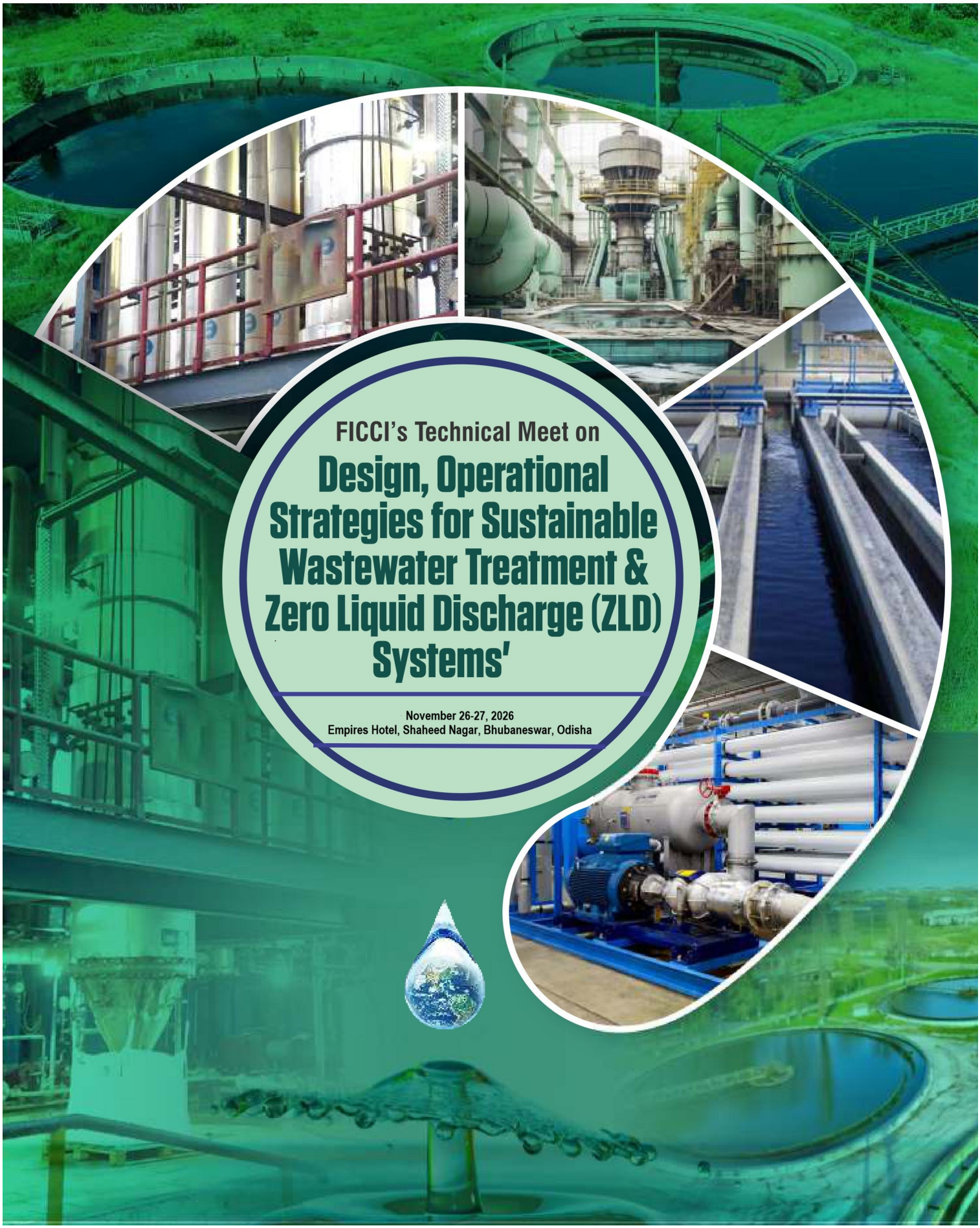
FICCI 100
100 YEARS OF BUILDING TOMORROW



FICCI's Technical Meet on

Design, Operational Strategies for Sustainable Wastewater Treatment & Zero Liquid Discharge (ZLD) Systems'

November 26-27, 2026
Empires Hotel, Shaheed Nagar, Bhubaneswar, Odisha

Background

Selection and operation of Effluent Treatment Plant (ETP) and Zero Liquid Discharge (ZLD) systems pose complex, interlinked challenges for the industry. First, choosing the right treatment scheme is critical for reliable, sustained operations. Industries must match schemes to variable influent chemistry, flow regimes, and downstream disposal constraints. Mis-sized units, inappropriate technology choices, or lack of contingency for seasonal or process-driven fluctuations lead to chronic underperformance, frequent interventions, and higher lifecycle costs.

Operational issues such as dynamic pollutant loads, corrosion and scaling aggressively affect equipment longevity and performance. Sudden spikes in toxics, oil and grease, or salinity force frequent chemical dosing, upset biological processes, and accelerate fouling. Corrosion, driven by pH swings, chlorides, and oxidants, shortens equipment life and inflates maintenance costs. Scaling in membranes and evaporators reduces throughput and energy efficiency, demanding costly cleanings and downtime.

Energy consumption and carbon footprint are rising concerns. RO trains, thermal evaporators, and mechanical concentrators are energy-intensive; without integrated energy recovery and optimization, OPEX and emissions escalate. Pressure on industries to meet ESG targets and regulatory expectations increasingly ties environmental performance to business risk and finance, making energy-efficient design non-negotiable.

Digital technologies and AI offer solutions, real-time monitoring, predictive maintenance, and process optimisation, but sometime adoption faces hurdles. Many plants lack robust sensor networks, have fragmented data systems, or suffer poor data quality. Developing and validating predictive models requires historical data, cross-disciplinary expertise, and change management to integrate AI outputs into operations.

A focused two-day capacity-building technical meet addresses these gaps by blending knowledge with practical diagnostics and industrial case studies. Through case studies and group exercises, participants learn to evaluate trade-offs between CAPEX, OPEX, reliability, emissions enabling more resilient, efficient and compliant ETP/ZLD solutions.

What Makes This Program Unique

This two-day technical meet between, experts \ speakers, technology providers, industry participants and pollution control board authorities is distinct in its integrated approach, combining design principles, technology selection, digital tools, and practical troubleshooting for wastewater, ETP and ZLD systems. Unlike conventional programs, it focuses on bridging the gap between conceptual engineering and real-world implementation, ensuring participants gain both foundational and application-oriented practical knowledge using industrial case studies.

Who Should Attend

- **ETP Operations and Maintenance Team**
- **Officers of Environment, Health & safety (EHS), Sustainability Team**
- **Corporate Design & Project Team**
- **Process & Product Design Team**
- **Research & Development Team**
- **RO, ZLD operations Team**

Focus Industrial Sectors

- Fertiliser & Pesticide
- Sugar & Distilleries
- Pharmaceutical & Bulk Drug Manufacturers
- Pulp & Paper
- Tanneries
- Chemicals
- Dyeing & Textiles
- Refineries
- Food, Dairy and Beverages
- Electroplating
- Power Plants
- Battery Manufacturing
- Synthetic Organic Industry
- Uranium Mining
- Co-generation Units
- Coal Mining & coal Liquifaction
- Ethanol Production
- Microelectronics
- ETP, CETP, ZLD Plants

Skills Participants Will Gain

Participants will develop strong capabilities in process fundamentals, technology selection matrices, energy and cost considerations, and design interpretation. They will also gain skills in digital monitoring, troubleshooting, developing BOQs, preparing CAPEX estimates, and evaluating reliable and sustainable ZLD/ETP solutions.

Important Topics to be Covered

TECHNICAL SESSION 1:

Latest Regulatory Framework & Present Status of ZLD Adoption in India, Opportunities Ahead for Achieving ZLD in Grossly Polluting Industrial Sectors

TECHNICAL SESSION 2:

Fundamentals of Various Treatment Unit Operations fo ETP, ZLD and their Specific Applications - Physiochemical, Biological, RO and Evaporation Technologies

TECHNICAL SESSION 3:

Various Treatments and ZLD Technologies : Various Schemes, Technology Selection Matrix, Basic Thumb Rule for Selection of the Schemes, Common Operational Challenges of ZLD Facilities, Essential and Mandatory Considerations for ZLD System Design for Reliable and Sustainable Operations.

TECHNICAL SESSION 4:

Importance of Primary Treatment System in ZLD Operations – Importance of Wastewater Chemistry, Selection of Technologies/Schemes and Current Advancements and Impact on the OPEX and Reliability of ZLD Systems; Biological Treatment Technologies

TECHNICAL SESSION 5:

MBR Technologies for High-Performance Treatment and Enabling Enhanced Recycling in the Downstream Tertiary Treatment Systems – Technology, Design Considerations, CAPEX/OPEX, Operational Aspects, Best Practices and Impact on the Downstream ZLD Facilities

TECHNICAL SESSION 6:

RO Technologies for ZLD Operations – Basic Concepts, Technology Selection Matrix, Common Operational Challenges, Essential and Mandatory Considerations for Design for Reliable and Sustainable Operations, Energy Recovery and Energy Management

TECHNICAL SESSION 7:

Evaporation Technologies for Rejects Management; Finding Solutions to High TDS Waste streams or Abrupt TDS Values Waste Streams

TECHNICAL SESSION 8:

Digital Technologies for wastewater treatment and ZLD – Basics of IoTs for effective process and reliable operations. Machine Learning and AI for predictive and reliable operations

TECHNICAL SESSION 9:

How to Develop ETP/ZLD project report, BOQs and CAPEX

TECHNICAL SESSION 10:

Overall ZLD System Troubleshooting and Diagnostic Analysis

Glimpse of Past Technical Meet






- **Group Exercises on Industrial Case Study**
- **Presentations on Latest Innovations/ Technologies Offered by Technology Providers**
- **Each Participant will be Provided with a Certificate of Participation after successful completion of the training**

Testimonials From Earlier Participants

DETAILED EXPLANATIONS ABOUT ZLD DESIGN & IMPLEMENTATION TOPICS

-PANIPAT CO-OP SUGAR MILLS LTD.

LINKING ALL PARAMETERS WHILE EXPLAINING ZLD CASE STUDIES: VERY INFORMATIVE

TATA STEEL BSL LTD.

EXCELLANT ARRANGEMENTS WITH HIGH QUALITY TRAINER

-PRISM JOHNSON LTD.

INDEPTH KNOWLEDGE IMPARTED OF BASICS & LATEST TRENDS IN WASTE WATER TREATMENT

-ENGINEERS INDIA LTD.

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As a member-led and member-driven organisation, FICCI represents over 2,50,000 companies across all segments of economy including public, private and multinationals. FICCI has a large international presence via partner agreements with 250 national business associations in over 100 countries.

FICCI through its Water, Wastewater Management, Water Auditing, Water Neutrality Studies have been supporting Indian industries since last decade. FICCI has in-house Certified Water Auditors certfied by CGWA, MoJS, GoI and Energy Auditors & Carbon Verifiers by BEE, MoP, GoI.

TECHNICAL SESSION SPONSORS

CONTACT US

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