

Challenges and Opportunity for Sewage Recycling Projects in India Wastewater Treatment 3 R's: Reduce, Recycle and Reuse

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Received date: October 19, 2021; Accepted date: November 05, 2021; Published date: November 12, 2021

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Description

Sauber Environmental Solutions Pvt Ltd. is a technology based EPC (Engineering, Procurement and Construction), project management and Consultancy organization in the field of water and wastewater management and providing services ranging from initial project conceptualization, planning, techno-economic feasibility studies, Design, Engineering, cost estimations, preparation of tender documents, tender evaluation and consultancy to full fledge EPC (Engineering, Procurement, Construction), Erection, Testing and Commissioning, Operation and project management on Turnkey basis.

We offer sustainable and uniquely integrated eco-friendly, low cost treatment solutions for water and municipal wastewater treatment, industrial effluent treatment, Biogas generation and recycle, recycle and reuse of treated wastewater/effluent.

Challenges to Wastewater Treatment in India

Here're a few challenges to wastewater treatment in India

Wastewater generation and treatment: According to estimation, about 38,254 million litres of wastewater per day (mld) is generated in the urban centres which comprises of Class I cities and Class II towns having the population of more than 50,000 (which accounts for more than 70% of the total urban population). The municipal wastewater treatment capacity developed so far is about 11,787 mld, that is about 31 per cent of wastewater generation in these two classes of urban centres. Majority of wastewater treatment plants are out of order due to lack of maintenance. The untreated wastewater also pollutes the existing water sources, only to add to the problem even more. Considering the population of India, ignoring the wastewater treatment issue isn't an option anymore.

Industrial and population growth: Growing population has increased the need for power generation, for example, which placed greater demands on water reuse.

Fresh water costs: The cost of clean, fresh water is continually increasing, and is impacting all Businesses, Societies, Communities

Regulatory requirements: Industrial sites have nowadays very stringent wastewater discharge permits that include flow and quality restrictions. Moreover, CPCB/SPCB Industrial Effluent Guidelines are often revised. Now, more demands and regulatory focus is on Zero Liquid Discharge (ZLD) for Industrial units.

Water scarcity: Many regions in India are susceptible to drought. Natural Ground water table is depleting in rapid pace. Additionally, some industrial plants have limited access to clean/fresh water.

Power costs: In many industries, electricity cost is quite significant and they put efforts to enhance the power consumption efficiencies by utilising various options of 'Waste to Energy' technologies

Land scarcity: In today's urban India, land availability is a major concern and always drives the companies for modern space saving technologies for their waste water solutions.

Sustainability efforts: Many companies strive towards sustainability by utilizing economically sound programs that help minimize a plant's negative environmental impact while conserving energy and natural resources.

Sewage recycling project reference

M/s Rashtriya Chemical and Fertilizers Limited (RCF) and M/s Bharat Petrochemicals Corporation Limited (BPCL) joined hands with the Municipal Corporation of Greater Mumbai (MCGM) to set up the 'Waste Water Recycling Sewage Treatment Plant.' The purpose of the project was to save the most precious gift of the nature "fresh potable water".

We at Sauber provided complete design engineering support and PMC to EPC Contractor, M/s SMC Infra Pvt Ltd, Mumbai, for 22.75 mild sewage recycling plant for m/s. rashtriya chemicals and fertilizers limited (RCF),

Trombay, mumbai by using state of the art technologies i.e. Membrane Bio Reactor followed by Reverse Osmosis System. This plant was commissioned in June 2019. The treated water of 15 MLD RO permeate is used by M/s. RCF and M/s. BPCL for meeting their industrial manufacturing needs thus addressing several of their key drivers like freshwater cost, regulatory requirement, discharge costs, water scarcity and above all sustainability (Figure 1).

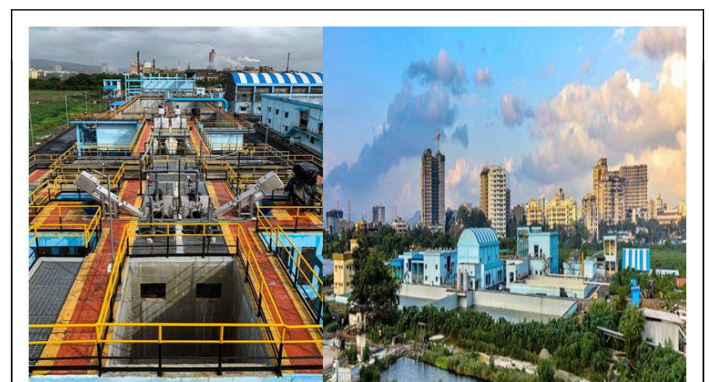


Figure 1: Industrial manufacturing needs.

Project major components

1. 45.5 MLD Sewage Pumping Station (SPS) in the premises of Municipal Corporation of Greater Mumbai (MCGM).

2. 22.75 MLD capacity Fully Automated Sewage Recycling Plant based on Membrane Bio-Reactor (MBR) Technology followed by Reverse Osmosis (RO) to generate 15 MLD of treated water at RCF Plant, Trombay.

3. 15 MLD Treated water pumping station with treated water pumps for treated water supply to M/s. RCF and M/s BPCL.

4. 800 mm diameter-4.5 Km DI K9 Raw sewage pumping main, 500 mm diameter- 1.5 km clear water pumping main for RCF and 300 mm diameter- 4 km treated water pumping main for BPCL.

It's a big step towards the Water Recycle and Reuse for industrial grade application purposes. The plant has been designed using state of

the art technologies i.e 'Membrane Bio Reactor (MBR) followed by Reverse Osmosis Plant to produce ultrapure water for industrial application purpose. Entire Project was implemented from Design to in 28 Months period.

A key challenge for Sauber was to accommodate the facility within a very limited space available and without disturbing operations of existing Fertilizers plant operations. The Sauber team came up with most creative engineering designs and accommodated the entire plant in the available space.

This project serves multiple purposes in one go and has also become a catalyst for similar projects across the country.

We at Sauber aims to support our client by providing cutting edge Sustainable Solutions, minimizing their Life Cycle Cost, as well as their Carbon and Water Footprint .