



Sustainability begins at home: Showcasing water efficiency

Wastewater treatment plant, India

In India, Alfa Laval has achieved its targets to recycle all wastewater, collect rainwater and bring liquid discharges to zero at its Pune facility with the installation of a new wastewater treatment plant using Alfa Laval's own technology.

The plant, which has capacity to treat 90m³ of wastewater per day, was installed and commissioned in 2021 and incorporates a membrane bioreactor (MBR) at the heart of the process and an ALDEC G3 decanter, which has replaced the traditional sludge drying beds used for dewatering.

"Sustainability is at the core of our business principles and saving water is essential," explains Subhasis Das,

Managing Director of Alfa Laval India. "We believe that sustainability begins at home and with this goal in mind and the aim of achieving zero liquid discharge, we have built a new wastewater treatment plant."

To achieve the objective of 100 percent water recycling, the project team discussed the scheme with several water consultants and contractors before selecting one to execute the project.

The scope of the work included the installation and plant commissioning with the capacity to handle effluent – alkalis, acids, paints, thinners – from several different sources, including a paint booth, effluents from the decanter factory, the high-speed separator factory, the aseptic module manufacturing unit, and the factory for pump, valves, and fittings as well as sewage from kitchens and washrooms of factories.

Two MBR modules were installed to consistently achieve the stringent outlet parameters throughout the plant's operation. The outlet of the MBR modules is directly recycled back to washrooms and gardening, which ensures that 100 percent of the inlet is reused, thus saving on raw water usage.



MBR Membranes

Membrane bioreactor technology is a future-proof solution for treatment of both municipal and industrial wastewater. It allows you to maximize resource recovery, minimize costs and implement a circular-economy perspective in your operations. Alfa Laval's membrane modules for bioreactors bring together the advantages of hollow fibre and flat sheet technologies. With Alfa Laval MBR membranes, you get trouble-free wastewater treatment at a low operating cost.

The centrate from the decanter goes directly to the inlet of the treatment plant, and the cake now free of harmful substances to the greatest possible degree is used as a fertilizer for gardening. With the help of this treatment plant, Alfa Laval India has ensured that no water goes into the drain and is entirely recycled for internal usage

Also, the plant recently has storm water drain lines equipped with rainwater recharge pits to ensure ground



water is charged. "Integrating Alfa Laval products in the overall plant design was a challenge. The plant's performance has enabled us to consistently treat our wastewater and circulate it back into gardening and flushing applications; treated waste water is reused, and this has reduced freshwater consumption by 12,000 cubic metres or 12 million litres," says Sanjay Marne, AL India's Health, Safety & Environment Manager."



ALDEC G3

Alfa Laval ALDEC G3 sludge dewatering centrifuges are the latest generation of sludge dewatering equipment for municipal and industrial wastewater treatment plants, designed to set a significantly higher standard for both process performance and environmental impact in sludge thickening and dewatering applications.

Alfa Laval products have helped us comply with strict environmental regulations and also enabled us to demonstrate to customers that we walk the talk when it comes to our water-saving and circularity goals under sustainability."



Clean water:

By achieving the reuse of 100 percent of water at its plant in Pune, Alfa Laval has saved 12,000 cubic metres or 12 million litres of water a year.



Chemicals:

By handling effluents in a much better way, Alfa Laval in India has secured the safe removal of chemicals like acids, alkalis, paint residues etc.



Pune is one of the fastest growing cities in India with a population that doubled in numbers from 1.6 million people in 1991 to 3 million in 2011. The population is expected to grow to 6 million by 2032. Efforts to safeguard water security and protect the city against flooding are high on the city's agenda to enable a sustainable development. In 2019, the city had a conservatively estimated requirement for 1,357 million litres of clean water a day and a water deficiency of around 200 million litres a day. (Hindustan Times, 2019)

How to contact Alfa Laval

Up-to-date Alfa Laval contact details for all countries are always available on our website at www.alfalaval.com

100016454-1-EN 2305