State of Water Sector

INDUSTRY SPOTLIGHT:
Filters, Ion Exchange, Flow/Water Meters, Pools, Spas, Irrigation, Water Purifiers

COUNTRY FOCUS:
China, Korea, Taiwan
“MLD is about Evaluating Customers’ Needs”

We will see a continued migration away from “one size fits all” water treatment approach in favor of customization through approaches like MLD. By matching waste streams and appropriate water requirements, MLD enables operators to better identify how much wastewater requires processing, and the most economical approach to meet individual plant needs. In China, for example, a coal–to–chemical plant was the first to validate a new process that combines IX with RO technology to improve water–usage efficiency and reduce discharged waste for MLD applications. In India, two pilot trials – both involving textile wastewater stream applications – have demonstrated advantages of the MLD process. By utilizing DOW FILMTEC™ FORTILIFETM RO Elements, one plant was able to increase water efficiency through higher production yields with 75 percent lower cleaning cost and 10 percent energy cost savings, in addition to an expected longer element life. The results of the second pilot, run with an RO reject stream, show that DOW FILMTEC FORTILIFETM XC–N elements reduce residual water hardness and color limits to <200 mg/L and <150 Pt/Co respectively, and recovered more than half of reusable salts, such as sodium chloride, for reuse in the textile dye process. As a growing number of industries turn to seawater, brackish water and recovered water for sourcing, the barrier becomes capital, and each company and industry has to balance that against current regulations, fees/fines and brand reputation. The good news is that product innovation – alongside new, disruptive strategies and creative thinking – will continue to improve efficiencies across the water value chain.

Plans for 2018

In 2018, Dow will continue its focus on helping customers manage the business cost of water, as climate change, population growth and industrialization place increasing pressure on our world’s water quality and supply. We believe the best solutions will come from combining cutting–edge technologies with novel water management strategies and site–specific customization. Minimal Liquid Discharge (MLD) is an approach developed by Dow that encompasses proven water solutions and is quickly gaining traction. MLD is designed to enable more with less. For example, achieving the final three to five percent of liquid elimination to reach Zero Liquid Discharge (ZLD) can be prohibitively expensive. An MLD approach on the other hand, helps industrial and municipal plants make substantial gains in brine management and discharge, while taking water recovery from an average of 70 percent – to as much as 95 percent – with minimal cost and significant savings compared to ZLD. The silver–bullet technologies that make MLD possible – Reverse Osmosis (RO), Ultrafiltration, Ion Exchange (IX) and Nanofiltration – currently exist. The key ingredient is individualization: MLD is about evaluating the customers’ needs, identifying sources and types of wastewater, and matching integrated technology systems to the waste stream to enable it for reuse. Dow’s new Water Application Value Engine (WAVE) modelling software complements MLD by helping simplify the multi–technology design process, and reducing the time it takes to estimate the performance of water treatment systems.