

# Keeping it fresh

A growing population, rising agricultural demand and expansion of industrialization are playing key roles in the growth of the water treatment market

## FELIZA MIRASOL/NEW YORK

THE RISING world population remains a central factor for industrial expansion and increasing agriculture, which, in turn, are driving the need for clean potable – or fresh – water. As a result, demand for water treatment products is also on the rise.

“Industrial expansion had a downturn in the last year. But it will continue to grow, particularly in less developed countries that are in transition to becoming more industrialized. Additionally, population growth and need for food will drive demand from the agriculture sector for more potable water,” says Paul Turgeon, COO of UK-based BWA Water Additives.

“Juxtaposed against these trends is the fact that the sources of potable water are dwindling with time, therefore many countries are increasingly faced with little choice but to turn to the desalination of seawater as a primary source of fresh, clean water,” he adds.

Another factor that has material influence on the water treatment market is the regulatory environment. Today, the trend toward more environmentally friendly or environmentally acceptable products is having an impact. Products that will have human contact are becoming more tightly regulated, Turgeon notes.

The US and Europe, in particular, are facing more stringent regulatory requirements

to reuse water at industrial facilities.

“Taken as a whole, these factors are driving both the growth of the water industry overall and the need for specialized products to meet changing needs over time,” he says.

The desalination sector is growing at around 8–10%/year, down from the 15%/year growth it experienced before the recession began, in late 2008.

“We expect growth in the desalination sector to get back up to 15% in the next 12–18 months,” says Turgeon.

The industrial application sector has weakened, with growth remaining flat in the past year. Industrial water applications were hit by the wave of manufacturing



**“We saw especially good growth in the desalination sector”**

Paul Turgeon, COO, BWA Water Additives

facility shutdowns.

“Some of our competition have had about a 20% attrition rate year over year, to give you a sense of how the downturn has impacted the industry,” notes Turgeon.

BWA has done well through the weak economy, largely as a result of a strong new product suite that kept sales up. The com-

pany has launched more than 50 new products over the past three years into several different water application markets.

“We had good growth coming from those new water treatment products, and we are essentially even, year over year, with only slight attrition in the industrial water sector. We saw especially good growth in the desalination sector,” Turgeon explains.

## A FUNDAMENTAL RESOURCE

“Water demand and security are the primary drivers in the water treatment market today. Major trends to watch for are desalination and water reuse. Both are being used to address the growing demand and need for clean, safe water,” says David Klanecky, global R&D director of Dow Water & Process Solutions, a part of US-based Dow Chemical.

Water is a global issue and has become a serious challenge during the past 15 years. Water treatment accounts for 10%, or \$40bn (€28.4bn) of the approximately \$400bn global water industry, Klanecky notes, citing data from US-based research company Stanford Group.

Consequently, investments in water treatment facilities, technology and innovation have increased.

“Everything we touch needs water to be produced – from food to cars. Water is a vital resource, not to mention we need it to live.

Investment from companies and governments in finding a solution here has increased significantly compared to 10 years ago in order to address the increase in demand. And more can still be done,” says Klanecky.

“We believe the water space is an important area where science and technology can make a difference,” he adds.

“The situation is that the number of potable water sources is decreasing over time, so the interest of governments and companies investing in water treatment facilities has been increasing,” notes Turgeon.

The increased investment over the years from governments and companies into water treatment facilities has been driven by these trends. At the same time, developmental barriers exist, such as in arid regions of the world that do not have direct access to fresh water. Nevertheless, population and industry both continue to grow and the demand for fresh water further burdens an already resource-deprived region.

Some examples are Australia, China and India. “There is much growth being seen in Australia, China and India due to arid conditions and/or limited potable water supply. There are dozens of desalination projects being developed there,” Turgeon points out.

On the other end of the spectrum, well-developed countries are expected to also feel the pinch of the water supply shortage.

“Countries that 20 or 30 years ago didn’t have a problem with fresh water supply are now beginning to feel the strain on resources and the need to develop water processing capabilities. Their demand is outstripping their capacity,” Turgeon explains.

However, complicating the issue is a

misconception that water scarcity is a problem only for underdeveloped countries. In areas where water seems to be plentiful, people are not as quick to conserve, notes Dow’s Klanecky.

“Education is crucial here. And that is one of the ways that water treatment companies can help with the issue of water scarcity.

Beyond looking to address both the scarcity and cleanup of water, as well as developing a source either via desalination and/or water reuse, water technology companies can keep the water shortage issue top-of-mind,” says Klanecky. “From the beginning, the solution

to this global issue starts with conservation and the efficient use of our most precious resource – water.”

## FRESH TECHNOLOGY

With recycling and reuse of water on the rise, one requirement that increasingly needs to be met is an effective water treatment strategy against bacterial fouling.

“Demand for biocides to prevent microbial attack is increasing, as pressure for energy efficiency and industrial hygiene rises,” says Nanette Hermsen, strategic marketing manager at Dow Microbial Control.



Dwindling water resources are pushing innovation in areas such as biocides

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## SPECIALTY CHEMICALS WATER

Dow Microbial Control is using science and technology to help customers identify and control bacteria that can disrupt operations and reduce efficiency while allowing water recycling.

Dow microbiologists use cutting-edge laboratories and equipment and high-throughput testing, which allows it to help customers optimize biocide treatments. This is done by matching the distinct chemical to the environmental conditions and problem-causing bacteria that need to be controlled.

"For example, biofilm is a key issue for many of our customers. Biofilm formation can harbor nuisance organisms and limit the efficiencies of the cooling equipment. Dow Microbial Control has focused extensive laboratory studies relative to biofilms and opportunistic pathogens, like *Legionella pneumophila*," says Hermsen.

Dow Microbial Control offers water

## "Globally, industrial water treatment is an important market segment"

Nanette Hermsen, Dow Microbial Control

treatment microbiocides under the product name AQUAR, which are used to control bacteria, algae and other pathogens. AQUAR microbiocides help to prevent microbial contamination of water or fluids for reuse that could otherwise impact heat exchange, efficiency of equipment or asset integrity, including corrosion.

"We continue to invest in microbial control technologies, especially in the area of delivery system enhancements and non-oxidizing biocides," says Hermsen. "We enable improved worker stewardship with easy-to-use formulations and innovative delivery systems with environmentally preferred solutions."

Key applications for Dow Microbial Control's biocides include cooling towers, comfort cooling, and industrial reverse osmosis membranes. "Globally, industrial water treatment is an important market segment for Dow Microbial Control and we have made significant investments in resources and technology," says Hermsen.

Meanwhile in Germany, specialty chemical company LANXESS announced in January that it is building a new €30m (\$42m) plant at its site in Bitterfeld, marking a move into a new segment of the water treatment business – membrane filtration technology.

## LANXESS HELPS HAITI



REX FEATURES

German specialty chemical firm LANXESS will be coordinating with Deep Springs International (DSI), a nonprofit organization in Pennsylvania, US, to provide Haitians with safe drinking water.

The joint effort will be coordinated through LANXESS employee Jeff Ritter.

DSI is offering a sustainable solution to the water crisis in Haiti by providing simple water treatment systems.

They use modified buckets and liquid chlorine solution, as recommended by the US Centers for Disease Control.

Since the earthquakes in Haiti last month, DSI has employed solid chlorine tablets compatible with DSI systems for water treatment until the liquid system can be produced and distributed.

Ritter works in the technical and services procurement department for the company's North American arm, LANXESS Corp. and has previous emergency response procurement experience from two hurricanes that have hit LANXESS plants in the US in the past few years.

His son was working for DSI in the village of Baudin, Haiti, when the earthquake hit.

By moving into this field of technology, LANXESS is opening itself up to further areas of application in water treatment, the company said. The global membrane market alone is estimated at €1bn and growing, according to LANXESS.

The new plant is scheduled to come on stream with a pilot and development phase by the end of this year. The first products from the new plant are expected to be launched on the market in 2011.

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