



Market Overview

By 2030, under an average economic growth scenario and without efficiency gains, global water requirements will grow from 4,500 billion cubic meters today to 6,999 billion cubic meters – a 50 percent increase in just two decades¹. Analysts predict that available water supplies will satisfy only 60 percent of demand².

Demand for water continues to grow as a result of increasing population, urbanization and higher living standards. A critical fuel for economic progress, water is vital to energy-generation and commercial and industrial operations, driving companies to seek out both time-tested and new ways to purify water that are both cost-effective and environmentally-friendlier.

Water is a \$400-billion industry, and component technologies comprise roughly 10 percent of that number³. As a leader in water treatment and processing, Dow Water & Process Solutions is meeting global water challenges as business opportunities in key sectors of the global economy.

Water Treatment Applications

Municipal Potable Water/Desalination - The market size for municipal water filtration and separation is approximately \$6 billion, but access to safe, clean water is still lacking for nearly one billion people around the globe. Increases in population, environmental elements such as drought and industrial stresses on local water supplies are driving industry growth rates in excess of ten percent in many parts of Asia, Australia and the Middle East and exceed three percent in other regions⁴.

Power –Population increases and industrialization are driving world electricity generation capacity, which is expected to double over the next 30 years⁵. Plants are increasingly including technologies and fuel sources that boost efficiency, decrease greenhouse gas emissions and protect the industry from volatile fuel prices.

Industrial - The evolution of industrial water treatment is being driven by increasing demand for reliability, cost-savings and water quality. Industrial applications, including power, are responsible for 16 percent of today's global water demand and rapidly-developing economies are increasing this need. By 2030, power and industrial needs will constitute 22 percent of global water demand, and forty percent of this growth will be driven by China alone⁶.

Residential & Commercial – Increasing populations, rapid urbanization in Asia and growing awareness of the health benefits of clean water are major drivers in residential and commercial water treatment. As rapidly-developing economies grow and communities reach higher levels of affluence, demand for residential and commercial water increases. The global residential water treatment equipment market is showing average growth of 20 percent annually, with total market volume predicted to reach more than \$10 billion by 2015⁷.

Wastewater & Water Reuse – Globally, microfiltration membrane treatment is likely to witness 15% compound annual growth from 2008 to 2015⁸. This growth can largely be attributed to increasing use of microfiltration membranes in industrial wastewater treatment. Increasing production volume and technological improvements have reduced capital cost of membrane systems and operating cost to the point that membrane treatment is now seen as a viable alternative in many water and wastewater applications.

¹ "Charting our Water Future: Economic Frameworks to inform Decision-Making," 2030 Water Resources Group, 2009.

² "The business opportunity in water conservation," The McKinsey Quarterly 2010 Number 1, pg. 68.

³ Stanford Group Co., 2008

⁴ "Water Treatment Grows Apace with Population," ICIS Chemical Business, July 24 2009.

⁵ EIA International Energy Outlook, May 2009.

⁶ "The business opportunity in water conservation," The McKinsey Quarterly 2010 Number 1.

⁷ *Global Competitive Environment for Residential Water Treatment Equipment Markets F455-15*. Frost & Sullivan, 2005.

⁸ "Global Membrane Market for Water and Wastewater Treatment Forecasts and Analysis to 2015," Global Markets Direct, Nov 2009.



Water Processing Applications

Catalysis - In the U.S., uncertainty about biodiesel production tax credits is driving producers to seek cheaper, more varied feedstocks. Soybean production in Argentina and Brazil slipped by 17 percent in 2009 and is now expected to increase by 30 percent in 2010, lowering the price of the most common feedstock and helping Latin American producers improve thin margins⁹.

Chemical Processing - The North American chemical processing industry alone consists of nearly 4,000 operational plants¹⁰. As economic conditions put pressure on capital and maintenance budgets, plant owners will search for technology that provides greater reliabilities, efficiencies and compliance solutions for existing assets.

Food & Beverage – Analyst outlooks for 2010 reveal that the industry is "going green" after discovering that what is good for the planet is also proving to be good for business¹¹. Energy-savings and reduced environmental impacts in food and beverage processing are key to supporting corporate sustainability initiatives.

Hydrometallurgy- In the past, plentiful water supplies meant that water planning was not a top priority for mines; today, scarcity issues are making water sourcing a crucial part of the planning process. Access to clean water supplies and the ability to capture and reuse wastewater are playing a greater role in mining operations globally.

Pharmaceutical - Rising incomes, a burgeoning middle class, fast-developing infrastructure and increased spending on health care are driving pharmaceutical markets in China, India, Brazil, Mexico, Russia and Turkey. Pharmaceutical manufacturers are developing new products, increasing capacity and implementing processing efficiencies to help control costs.

⁹ "OUTLOOK '10: Bloated biodiesel industry on EU life support," ICIS, Dec 29 2009.

¹⁰ ChemicalProcessing.com Industry Outlook, Dec 17, 2008.

¹¹ "State of the Industry," Food & Beverage, Jan 2010.