



GEMI[®]

Collecting the Drops:

**A Water
Sustainability
Planner**

Case Example

The Dow Chemical Company: Reclaiming Wastewater at an 86 Percent Recovery Rate

As a science and technology company that serves consumer markets worldwide, The Dow Chemical Company stresses the development of innovative solutions to satisfy its clients' needs. One focus area for product innovation has been water purification technology, especially as demand for high-quality process water in the Asia Pacific grows alongside the rapid economic development in the region.

A Dow client in Singapore poses one example of how an innovative product—in this case, the FILMTEC™ system used in reverse-osmosis (RO) water purification systems—makes a difference when demand for high-quality process water exceeds supply.

Since 2000, an RO plant operation has been processing tertiary-treated wastewater effluent using FILMTEC fouling resistant elements and converting it to high-grade industrial water for Singapore's petrochemical industry.

A major design feature of FILMTEC membrane technology is responsiveness to the need for ongoing cleaning. FILMTEC elements incorporate features that provide maximum efficiency and effective cleaning of scale, organic compounds and biofilm. These features include the industry's thickest feed spacer and a wide pH cleaning range (pH 1-12), along with a greater number of shorter membrane leaves, to reduce the overall effect of fouling and increase element efficiency. Combined, these features allow for more efficient and effective cleaning resulting in lower cost of ownership.

Since start-up, the Singapore client's reverse osmosis plant has performed well within the stringent operating conditions imposed. The high recovery of 86 percent pioneered by this project is now considered an industry benchmark in tertiary effluent wastewater reclamation. Operating costs are lower compared to older plants using membranes that are not designed to be resistant to fouling.