# Energy Diet: Margarine & Vegetable Oil Plant Sheds More Than Expected

**A reverse osmosis system is helping Unilever reduce water and natural gas consumption as well as chemical usage. It's yielding both financial and environmental benefits**

In the face of rising and unpredictable energy prices, Unilever's plant in Rexdale, Ontario, has embarked on a campaign to improve energy efficiency in order to remain competitive. The plant consumes huge quantities of energy for the annual production of 185 million pounds of margarine and other vegetable oil products. In fact, energy expenditures represent 15 percent of all production costs. To meet an aggressive goal of reducing energy consumption by at least 6 percent per year, the plant's energy team has implemented, and carefully documented, 120 projects since 1999, saving more than $4.2 million in energy costs and eliminating about 23,000 tons of greenhouse gases. The initiatives of the team are part of Unilever's corporate commitment to environmentally responsible practices at its 365 manufacturing sites across six continents. In 2005, for the seventh year running, Unilever led the food industry category of the Dow Jones Sustainability World Indexes, based on assessment of corporate economic, environmental, and social performance.

"The results of the RO project have greatly exceeded our expectations, and they are easily measured," says Dittburner. "In the first year of operation, we calculated that the project produced a net savings of $378,166, even after accounting for the full cost of operating and maintaining the RO system. We calculate that the RO system will pay for itself in less than 16 months." By converting to the RO system, the plant is consuming 13 million gallons less of municipal water ($68,000) and 8 percent less natural gas ($299,000). The plant is also saving $11,700 in boiler chemicals and $22,000 in commodity softening chemicals, allowing 240,000 less pounds of chemicals into the sanitary sewer. These costs savings do not include the safety and ergonomic benefits of eliminating the backbreaking work of handling 3,976 bags of salt, each weighing 44 lbs, and the related labor and storage costs. The RO system also qualified the Rexdale plant for a $50,000 incentive grant from the city of Toronto for decreased water consumption and a $14,000 incentive grant from local gas utility Enbridge Consumers Gas. According to Dittburner, "The RO project is easily justified by the direct financial benefit to Unilever, but we are also proud of the environmental benefits. The project has led to our producing 1.6 million fewer kilograms of carbon dioxide as well as

reductions in methane and nitrous oxides. We are also consuming far less chemicals and reducing the environmental impact of producing and transporting those chemicals." *GE Water & Process Technologies, a unit of General Electric, solves water challenges by providing industrial, agricultural, and potable water while lessening dependence on fresh water sources. Technologies to accomplish this include desalination, advanced membrane, separation solutions, water reuse, and wastewater management and process technologies. More information is available by visiting* www.gewater.com *[1].*

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