

Clean water for northern Ghana

### **Membrane elements from LANXESS for beverage producer in Ghana**

**Cologne** – The reverse osmosis filter elements of the specialty chemicals company LANXESS are helping to supply clean drinking water in northern Ghana. The water-treatment plant of Mazareka Co. Ltd., which is based in Tamale/Kanshegu, is equipped with Lewabrane RO B400 HR membrane elements. It has a capacity of 40 cubic meters per hour and supplies water for approximately 600,000 persons. That includes the 400,000 residents of Tamale, the capital of Northern Region, and neighboring communities within a radius of 200 kilometers. Application technology from the Liquid Purification Technologies (LPT) business unit at LANXESS helped with the design of the filter system used by the plant. “We also taught the employees of Mazareka how to use the Lewaplus design software, so that any necessary adjustments can be made to the equipment if there is a change in parameters,” says Dr. Jens Lipnizki, Head of Technical Marketing Membranes at LPT.

The spiral-wound Lewabrane RO B400 HR module consists of a polyamide composite membrane and was developed for industrial water treatment and the purification of drinking water. The outstanding feature of the Lewabrane HR (high rejection) membrane is its high retention of critical components such as nitrates and organic compounds. It delivers excellent permeate quality and satisfies NSF/ANSI Standard 61 for drinking water system components.

#### **Water is a rare good – and it is rarely good straight from the tap**

Mzareka’s modern drinking water treatment plant is the first of its kind in the northern region of Ghana. The supply of drinking water is especially poor in this part of the country, with approximately half of

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the population having no access to clean drinking water at all, according to official statistics. Because of infrastructure problems and aging pipes — the current water distribution system is 80 years old in some places — more and more households are depending on water from plastic containers and tanker deliveries. Water commonly comes in the form of one-half-liter plastic bags of normal tap water, from which only the suspended solids have been filtered out. These "sachets" cost the equivalent of about three euro cents and are easy to use: Bite off a corner, suck out the water, and throw it away. But the quality of the water and its taste often leave something to be desired. Mazareka has therefore set itself the goal of combining the best hygienic practices with modern reverse osmosis technology to produce high-quality water for safe consumption.

"We have a major competitive advantage over the few producers in the south of the country, who have to pay high transportation costs to bring their products north," says Dieter Heinrich, an industrial foreman from Saarland, Germany. He and Moses Azare, a manager at the telecommunications company Millicom International Cellular (Tigo) in Ghana, founded Mazareka in 2013 in order to supply Tamale with water according to European quality standards. Heinrich, who is active in local politics in Germany, has been providing support to children in China, Uganda, and Ghana for many years now. While visiting his foster child in Ghana, he got to know the country and its water problems — and met his current business partner, Azare. Together they worked out a business plan for the water project and, following a geological appraisal, invested the equivalent of EUR 5,000 to drill a well. In January 2013, the company erected a 300-square-meter building that now houses a storage area, an office, and the filtering and filling system.

### **An investment in the future**

In October 2013, Mazareka began producing sachets filled with water and soft drinks, the latter consisting of water with pineapple, cola, orange or grapefruit flavoring added. But with the filter elements

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initially used in the system, the channels of the membrane elements quickly became clogged, and the elements blocked the flow of water. That problem shut down the plant. "Since we switched to Lewabrane, our filter system has been running perfectly, and it needs to be cleaned much less often. The investment was worth it, because it has also increased our productivity," says Azare. The company recently began distributing its products not just in sachets but in PET bottles, too. "Energized drinks" — water with sugar, sweeteners, and lemon flavoring — are now available as well. "We have already made a name for ourselves with our sachets. The people appreciate the water quality and the good taste of our beverages," says Heinrich. He and Azare have already made plans to expand. "We want to supply the bordering countries of Burkina Faso and Togo, too. Before the end of the year, we are also going to buy a generator, so that we can produce without relying on the public power grid," says the 60-year-old German. At present, the company often has to work at night, because the grid is overloaded at peak times during the day and there are power failures.

The young Ghanaian company has 30 employees who see to the pumping of water, purification, UV disinfection, the filling of sachets and bottles, transportation and system maintenance. They are regularly trained by Heinrich in process optimization. Heinrich himself was trained as a quality manager by the Deutsche Gesellschaft für Qualität (German Institute for Quality, or DGQ). He is a specialist in total productive maintenance (TPM), and until recently he trained the employees of an automotive supplier in Saarland, Germany. "My coworkers benefit from that experience, and so does the quality of our products," he says.

LANXESS is a leading specialty chemicals company with sales of EUR 8.3 billion in 2013 and roughly 17,000 employees in 31 countries. The company is currently represented at 52 production sites worldwide. The core business of LANXESS is the development, manufacturing and marketing of plastics, rubber, intermediates and specialty chemicals. LANXESS is a member of the leading sustainability indices Dow

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## News Release

Jones Sustainability Index (DJSI World and DJSI Europe) and FTSE4Good as well as CDP's Climate Disclosure Leadership Index (CDLI).

Cologne, July 29, 2014  
kaw (2014-00077e)

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