

## Corporate Responsibility

# Safe, clean, and affordable

I&S Water Technologies provides clean water to 2,500 people in Kenya with its Safe Water Kiosk filtration system

By Johannes Dieterich

Aloo Lichera sits where he does every day: on a termite hill in the shade of an acacia tree not far from the dam that serves as the water source for the people of Obambo and Kadenge, two villages located in the westernmost region of Kenya. "You can't imagine how happy we are that we finally have this water!" says the 75-year-old man, pointing to the clear water that flows from a pipe in front of a small brick house nearby, where women have already formed a line, each carrying yellow canisters. Until the beginning of this year, they still fetched the water directly from the dam, Lichera continues. Stomachaches and diarrhea had been his constant companions. Then the retired street peddler pulls from his pocket a plastic bag that is connected to his abdomen by a hose. There is no doubt in Grandpa Aloo's mind that his bladder trouble is also the result of the filthy water that he drank his entire life.

At the very head of the water line stands Monica Owinjis, who has already lost three of her ten children. The destitute subsistence farmer did not even have the money to buy firewood to boil the water. The 45-year-old believes that this situation was certainly her children's undoing. At the nearby health center, Peter Omoth calls the regional water situation "an absolute catastrophe." He's a health-care worker who is constantly dealing with cholera, typhus, and all possible variations of diarrhea and diseases caused by worms.

Since March of this year, at least the villages of Obambo and Kadenge are safe. Hidden in the small brick house next to Grandpa Aloo's home, three cartridges about the size of medium-size organ pipes turn the dark brown sludge from the dam into crystal-clear drinking water. Known as Sky Hydrants, their prototypes were developed at Siemens' Australian plant for water technology. The filters use highly advanced technology: Each cartridge contains 10,000 minipipes made from extremely thin membranes. Measuring only 0.1 micron in diameter, the openings prevent dirt particles and bacteria from passing through. The technology, developed in Sydney in the 1980s, has already started its triumphal march through the large municipal purification plants of this world. However, it is thanks to the 50-year-old Australian Rhett Butler that the ultramodern filters can now also be used in regions suffering from extreme poverty like Obambo and Kadenge.

Butler, an engineer and head of marketing for the Memcor company, ac-



Before and after: The Safe Water Kiosk filters contaminated water

quired by Siemens three years ago, had traveled halfway around the world on countless business trips. It was during those trips that he noticed how many people still do not have clean drinking water—according to UN figures, they number 1.5 billion. Butler considered it "embarrassing and virtually unbearable" that his company possessed the excellent technology to provide umpteen millions of people

with the best drinking water, even in developing countries—but that it was out of the question due to the high costs of the filter systems. Without further ado, he cleared out his garage in Sydney and started tinkering on a simplified version of the cartridges. That's how the Sky Hydrant came into being. In 2004, as the worst tsunami in a century devastated large sections of Southeast Asian coastal regions, Butler's patent was put to the test for the first time. Some 300 of these extremely low-maintenance hydrants with low operating costs were delivered to Sri Lanka, Indonesia, and Thailand, to help prevent the people in those areas from contracting typhus or cholera in huge numbers.

While use of the Sky Hydrant is spreading throughout Southeast Asia, the project in Obambo and Kadenge is still the only one of its kind on Africa, the continent with the greatest need for assistance. However, this situation is expected to change soon: Butler wants to use the prize money he won to buy additional filtration systems for the region. He received this prize money along with the Corporate Re-



The people of Kenya are delighted – finally they have clean water

sponsibility Award, which Siemens awarded for the first time in 2007. "Marvelous!" responds Florence Atieno, who until now has had to walk one and one-half hours each and every day to fetch water from the Gona dam and from time to time has regretted having married a man in such a remote village. "Then life can finally begin for real," she adds.

## Info box

## Safe Water Kiosk

At a glance: The winning project of the Corporate Responsibility Award 2007

## Who we are

I&S Water Technologies (WT),  
Australia  
• Tony Handakas  
• Rhett Butler  
• Bruce Biloft

## Initial situation

- Today, 1.2 billion people worldwide live without access to potable water
- 2.4 billion people are not connected to sewage systems
- Some 4,500 children die every day due to unsafe water and inadequate hygiene
- I&S WT offers proven filtration technology for sustainable, suitable solutions

## Our project: Safe Water Kiosk

- We developed the Safe Water Kiosk, utilizing Siemens Memcor® technology, to provide underdeveloped, remote, crisis, and disaster regions with pure, safe, affordable water
- As part of a pilot project, the I&S WT filtration system is now providing a sustainable water solution for low-infrastructure communities in Kenya, supplying drinking water for 2,500 people
- Safe Water Kiosk is inexpensive and simple to operate, and makes a significant contribution to achieving the UN's Millennium Development Goals of ensuring environmental sustainability
- With the international roll-out of the Safe Water Kiosk, new markets and business opportunities can be identified



CEO Peter Löscher presents the Corporate Responsibility Award 2007 to the Safe Water Kiosk team

## Our success factors

- We enlisted the support of all relevant stakeholders and involved the local community in all stages of the project
- We partnered with the not-for-profit organization "SkyJuice Foundation"
- We selected a proven, low-cost technology with no consumables or chemicals and no moving parts
- We trained members of the community in the operation and maintenance of filters and pumps
- The system operates on a user-pays basis, is fully owned by the community and has completely transparent costs

## What we have achieved

- Pure, safe, affordable water for less than 50 cents per year per person

- Water quality exceeds all minimum requirements
- Solution can be globally adapted, with a potential for installation of over two million units worldwide
- Promotion of educational programs teaching safe water hygiene
- Solid benefit-to-cost ratio

## Our goals for the future

- Identify new project sites
- Exploit potential market

## Information/Contact:

For more information, contact us:  
Rhett.butler@siemens.com

Information on SkyJuice Foundation  
<http://www.skyjuice.com.au>

## Interview

## A reliable solution

A conversation with Roger Radke, head of Water Technologies

Siemens Water Technologies – created in 2004 through the acquisition of US Filter – has increased its new orders year after year. What started with activities limited almost exclusively to North America has now developed into a successful international business.

Where do you see Siemens Water Technologies positioned in five years in the emerging markets worldwide?

In the last two years, our international business has grown by almost 300 percent. We expect international growth to continue in key regions and markets around the world – where infrastructure is either over-stressed or in need of expansion due to population growth and industrial expansion. In the last year, we have made important strategic decisions to support this growth through our regional hub concept to expand sales, marketing, and manufacturing into the European and Asia-Pacific region. And the opening of the WT global R&D center in Singapore will harness our internal R&D resources to expand and fine tune our programs and projects so we are even better at developing leading-edge technology worldwide. This more global positioning will support enabling technology solutions such as the Safe Water Kiosk.

What role does technology like the Safe Water Kiosk play in the Division's future?

Access to safe water is a fundamental need and basic human right. Today, over 1.2 billion people do not have access to safe drinking water. In addition, natural disasters are leaving even people in developed countries without

potable water. The Safe Water Kiosk is a technology solution to provide a reliable source of clean drinking water to communities without access to a safe water supply. In the near term, Water Technologies intends to ramp up our activities surrounding the Safe Water Kiosk program. In recent weeks, we've helped provide units to Peru and Oman and Mexico.

Why does membrane technology hold such promise to deliver low cost, affordable water?

Our membrane technology is an enabling technology. The membrane modules used for the Safe Water Kiosk are the same membranes used in more than 1,000 drinking water, water reuse, and wastewater applications worldwide. As the membrane technology has advanced, the cost per unit has fallen, making previously uneconomic applications more viable. The Safe Water Kiosk is designed to use high-performance membranes with simple filtration and cleaning. Thus, it's easy to operate and maintain, and quick to deploy – making it a viable solution in natural disaster areas and developing countries.



Roger Radke, head of Water Technologies