

World renowned Dutch water technology at AquatechChina 2009 trade fair

Dutch water sector ready to export its advanced water reuse technology to China

At the Dutch pavilion of the AquaTech China 2009 trade fair, June 3 to 5, leading Dutch water technology companies will show their newest products and services. In the past decades the Dutch water sector has developed a number of innovative technologies for water reuse. One of the exhibitors at AquaTech China is NethWater, a consortium consisting of four Dutch water technology companies with a track record in design, construction and operation of advanced water treatment plants for the chemical and petrochemical industries. According to Markus Flick, director of NethWater partner Evides, the consortium's expertise is gained by operating many installations throughout Europe. In this article Flick explains what makes the Build, Operate, Transfer-service (BOT) by NethWater so special for the Chinese chemical industry. Next year NethWater will ship a containerized installation to China to demonstrate the well-advanced and optimized Dutch water technology.

Having such an abundance of water, the Netherlands does not seem to be a logical country to have developed leading technology for water reuse. Normally water reuse relates to countries with droughts and a shortage of fresh water, such as in Northern China. Yet, throughout history the Netherlands has learned that water use in densely populated areas with heavy industrial activity and extensive agriculture can put high restraints on the natural water system. Pollution has always caused great concern, forcing the water authorities to enforce very strict discharge standards. Dutch industry and the municipal waste water treatment authorities had a hard time meeting those standards. Together with the private water sector, they eventually developed advanced water technologies. The Netherlands became the leader in new advanced biological treatment and in membrane filtration for water reuse. The combination of traditional biological treatment with membrane filtration in the Membrane Bioreactor (MBR) proved to be a great success, especially for industrial applications.

Cleaned waste water as good as fresh water

"Large industrial water users in market sectors such as the chemical, food, energy and paper industry in the Netherlands have always been under pressure to lower their energy and water costs," explains director Markus Flick of NethWater. NethWater specializes in BOT-services for highly advanced water treatment plants. According to Flick, Dutch paper mills, breweries and chemical plants have the lowest water use per product in the world.

"Although the Netherlands has a positive water balance, the coastal areas experience a shortage of suitable water sources. Both quantity and quality are in dear demand", Flick explains. It is in these areas that most chemical industrial complexes are situated, leading to the demand for water treatment solutions that provide reliable water services at competitive conditions. "The high cost of water treatment", he continues, "has stimulated the Dutch industries to reduce water use in their processes and to improve their water treatment plants."

"The effluent of these water plants has become an interesting source of fresh water provided suitable technology is available for upgrading its quality. We have been developing new projects involving technologies that fill this last gap, enabling the companies to reuse their own waste water as well as the water of nearby communities," Flick says.

Effluent becomes boiler feed water

NethWater will be present at AquaTech China for the second time. "Over the years we have appreciated the unique challenges and opportunities of the Chinese marketplace. With a strong focus on our key customer markets — the chemical and petrochemical industries, we see good chances for water reuse projects using Dutch water expertise."

NethWater concentrates these projects on North Eastern China. Flick mentions the water reuse by Dow Chemical as a good example. Effluent from a nearby municipal waste water treatment plant is turned into boiler feed water. The installation is equipped with an Airlift membrane bioreactor, designed and supplied by NethWater's partner Norit. The reactor turns the water into high-grade effluent that is suitable for direct treatment by RO.

Shipment of containerized reuse plant to China

For director Flick the trade fair is an important stepping-stone into the China marketplace for NethWater. NethWater intends to construct a containerized reuse plant for major industrial sites in NorthEastern China in 2010. The plant (50 m³/hour) will use various technologies including UF-and RO-membrane filtration to produce boiler feed water. The process is designed to treat municipal waste water. The demonstration plant will be operated by NethWater staff.

"We have great trust in our concept as we can offer proven-technology solutions by means of BOT contracts that meet the expectations and specifications of the Chinese chemical industry. As we operate the installation ourselves we have optimized our installation for low energy and maintenance costs. This results in extremely low operational costs, benefiting our clients in the long run."

Unique proposition to Chinese industry

Markus Flick is convinced that his firm has an unique proposition for the Chinese industry. "We are aware of the great competition in China with the large water companies such as Veolia and GE Water. They are successful in the market of large contracts and concessions. Dutch technology companies have traditionally been focusing on medium-sized contracts. The water-partnering to the Dutch industry has gained us a reputation in combining reliability, operational excellence and innovation within this market niche," states Flick. He mentions Greenfield projects specifically.

"Since China is both short in energy and water resources, the Greenfield projects demand cost-efficient technologies for water treatment and maximization of water reuse. NethWater specializes on water treatment and reuse solutions for chemical and petrochemical industries. We are able to offer full build, operate and transfer (BOT) projects to these demanding industries based on our more than 15 years of experience with world-class scale projects within all major multinational oil refining and chemical companies. The combination of process design, supply of proprietary technologies and operational excellence secure

operational stability at fixed prices to our clients," he asserts. NethWater's director is aware that BOT service is based on confidence and wants to invest in a long-term relationship with the Chinese industry.

Please check our website www.dutchwatersector.com for more information and for contact details.

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Notes for editors (not for publication)

- For more information please contact Femke Smeets, Netherlands Water Partnership, in the Netherlands (+31 70 304 37 12); e-mail: f.smeets@nwp.nl
- More information on the Dutch water sector is available on the special website of the NCWP: www.dutchwatersector.com
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Dutch participation at AquaTech China 2009

At the AquaTech China 2009, in Shanghai on 3-5 June, a number of innovative Dutch water technology firms will show their latest advanced water technologies. The companies are supported by the Netherlands Water Partnership (NWP) and the Netherlands China Water Technology Platform (NCWP).

The following organizations are present at the Dutch pavilion:

Netherlands China Water Technology Platform (NCWP)

NCWP puts the world-renowned water expertise and technology of the Netherlands at your service in China. The platform brings together the right partners to provide total technology solutions, meeting Chinese needs from design and engineering, to construction and after-sale service.

Bright Spark

Bright Spark is a successful Dutch water technology company that has developed a unique technique to disinfect water through anodic oxidation (electrolysis). The company also presents its paintless antifouling system for ships.

microLAN

microLAN is the world market leader for on-line toxicity monitoring systems using luminescent bacteria. Its system is already protecting the water of major capital cities, including Washington, Shanghai, Guangzhou, Shenzhen, London, Paris, Amsterdam, Barcelona and Milan. In Beijing microLAN's monitoring system was used during the Olympic Games of 2008.

TwinOxide

TwinOxide developed an effective and unique disinfection system based on chlorine dioxide. This innovative technology kills waterborne pathogens in drinking water without generating harmful by-products, and has been proven by researchers worldwide. The system is already operational in 25 towns in India.

NethWater

NethWater is a consortium of four Dutch companies combining skills needed to engineer, supply the technology for, and operate treatment plants. NethWater develops water treatment plants for the chemical and petrochemical industry and serves clients such as Shell, Dow Chemical, BP, Akzo Nobel and BASF.

The four Dutch companies co-operating in NethWater are Evides Industrial Water, Norit, Royal Haskoning, and Witteveen + Bos.

Philips Lighting

Philips offers a comprehensive portfolio of in-house developed and manufactured ultraviolet (UV) lamps, drivers and sleeves for water and air purification. Philips designs its products for maximum performance. All of its products are tested extensively before their release into the market. In this way, constant UV output and long life are ensured.

Taskforce Water

The World Expo 2010 in Shanghai provides an excellent opportunity to present the solution the Dutch have to offer to Chinese water-related challenges. Companies, knowledge institutes and governments have combined their strengths in the 'Taskforce Water' to prepare the Dutch water contribution to the World Expo.

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Dutch water sector to participate in World Expo 2010

The theme 'Better City, Better Life', together with the special ties with the city of Shanghai and the province of Hebei, have inspired the Dutch water sector to take a prominent position in the Dutch pavilion during the World Expo 2010. Activities will show the achievements of Dutch water technology to the general public and to Chinese water experts. In the 'Happy Street', where the Dutch pavilion, will reside, live demonstrations will take place of ultra-advanced drinking water installations. Video presentations will show advanced water plants in the Netherlands and in the VIP-launch six conferences will highlight water problems and their technical solutions in China and beyond.

The main project demonstrated at the Dutch pavilion will be the collaboration between the Dutch water sector and the Shanghai water company, which results in the development and installation of a revolutionary new UV/H₂O₂-technology. This technology will make the drinking water at the World Expo meet European standards. If this pilot project will be followed up by the partners, the entire city of Shanghai will meet European drinking water standards in 2012.

The Dutch water activities at the World Expo are coordinated by the Task Force Water, supervised by the Province of South Holland. Member of the Executive Board of the province, Mrs. Lenie Dwarshuis, will be present at Aquatech to explain the plans the Province has with the City of Shanghai.

For more information see the website <http://www.zuid-holland.nl/china> or contact M. de Nooij at +31 70 441 73 96; e-mail: m.de.nooij@pzh.nl

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Anaerobic treatment of industrial wastewater

Another innovative Dutch water technology presented at AquaTech China is anaerobic treatment of industrial waste water by means of granular biomass (UASB). This process converts organic matter in waste water into biogas, an ideal sustainable energy source to reduce CO₂ emissions. The UASB technology (as well as its successors, e.g. EGSB and IC) has been developed in the Netherlands. The world's largest supplier of this UASB technology is the Dutch company Paques. It has built more than 1,300 anaerobic waste water treatment plants, including a large number in China. Their unique market success in China is emphasized by their presence at this year's Aquatech China.